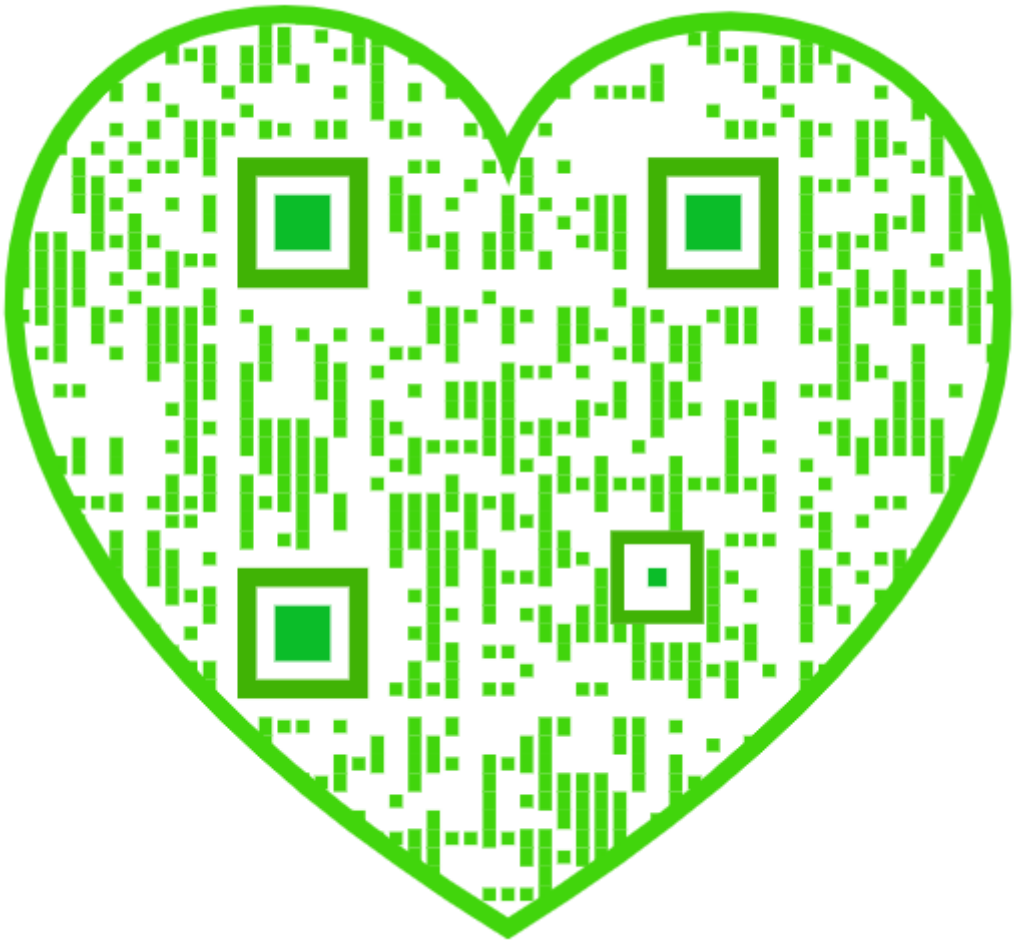
UMASS/AMHERST *
312066 0333 2622 2



The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER

VOL. V. WENHAM, MASS., JAN. 1, 1887. No. 1.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt delivery. Workmanship unexcelled.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our best queens at any time between June 1 and Oct. 1, by remitting 50 cts.

Address all communications AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

SUGAR STORES OR NOT?

R. L. TAYLOR.

The question of the desirability of using sugar to supply bees with the necessary stores for winter is a multiform one, and I fear is hastily decided this way or that, without a due consideration of it in all its bearings. To say nothing of the many incidental facts which have a bearing the one way or the other, it makes much difference as to the question of profit, whether the sugar is fed in exchange for extracted honey or comb honey, whether bees are likely to winter better on sugar stores than on honey or the contrary, whether the increased quantity of honey placed on the market in consequence of an extensive use of sugar for winter stores is to demoralize prices or not.

The matter of the effect on the markets must by no means be lost sight of. If all beekeepers were to extract all the honey from their hives and to winter their bees on sugar exclusively, the greatly increased quantity of extracted honey put upon the market in consequence would be utterly disastrous to prices. If double the usual amount of any commodity which is extensively produced be placed on the market, that market would be ruined. Honey can be no exception. It is equally plain that every additional person who gives sugar to his bees, in exchange for honey, is doing an injury to the honey market greater or less in proportion to the amount so exchanged; and inasmuch as it is now generally considered that that market is now depressed to the very verge of unprofitableness, it is evident that from compulsion, the general rule must be to winter bees on natural stores.

Making allowances for exceptional cases, this point would cover the whole ground, were it not for the fact that by skilful management it appears to be possible to increase the amount of salable comb honey at the expense of a greater or less lack of stores in the brood-chamber. That this is quite a different question will appear from the following considerations: The market for comb honey seems not nearly so much oppressed as that for extracted honey; it is more elastic, more capable of absorbing an extra amount without being affected. Then there is in the exchange of sugar syrup for comb honey a good margin of profit. Even at the present low prices, one-half the value of the extra amount of comb honey obtained would supply the brood-

chamber with the necessary sugar stores. And, again, in making this exchange, no handling of the bees or brood-combs is required. The labor of preparing and distributing the food is short, easy and not unpleasant. On the contrary, if the exchange of the sugar stores is to be made for extracted honey, the disagreeable and, without care, the somewhat dangerous work of extracting from the brood-combs, must be performed at a time when the bees have nothing to do but to watch for opportunities to make trouble, the marketing of the honey is apt to be disappointing, and at best there is no hope of profit unless it be found in what I would believe are exceptional cases, where the exchange so much improves the the qualities of the stores for wintering purposes as to give a probable success in wintering for almost certain failure.

This brings me to what is perhaps the most important point in the whole matter, and that is whether stores of pure granulated sugar syrup are better for wintering purposes than is honey. I have experimented more or less for the last seven or eight years with sugar for winter stores, with the result that I find within me an abiding faith in the value and the necessity of sugar stores if we are to allow every phase of the subject except successful wintering to drop out of sight. In the fall of '84, I supplied 200 colonies exclusively with such stores, and notwithstanding the ensuing disastrous winter, when fully ninety per cent of the bees in this part of the state perished, there was not a single normal colony out of the two hundred, that, so far as I could judge, did not winter perfectly. I expect sometime to be able to winter my bees perfectly and with certainty on honey, though I have not learned to do it as yet; but with sugar stores alone, I think I am warranted in saying that I can do it now with practical certainty. If I am correct in this assertion, it follows that there is a difference in favor of sugar between that and at least some kinds of honey for the purposes of wintering. What is the solution of this? I believe there are several reasons for it. First, stores gathered late in the season on account of the undesirable sources from which some of them are taken, and on account of the want of thorough evaporation are much more liable to fermentation than are properly prepared sugar stores. Secondly, many affirm, and I believe they are correct, that the pollen often found floating in honey, particularly in that gathered late in the season and but partially ripened, is a cause of discomfort to the bees and so a cause of much of the imperfect wintering. And then, thirdly, sugar syrup is in its nature much less exciting to the bees than any honey.

Every apiarist who has fed sugar syrup to bees cannot have failed to notice that it is a much pleasanter labor than would be the feeding of honey. He soon learns that it is very much less likely to incite robbing than is honey. Bees will become blind with excitement over exposed honey, while they will work lazily and without emotion on syrup. When spring opens, you will seldom see robber-bees prying into the hives of colonies whose stores are purely sugar.

Why should not these characteristics of honey and sugar have a corresponding effect upon the bees during the winter? I can conceive of no reason why they should not, and from my experience in wintering bees on both kinds of stores, am satisfied that they do. Any one I think would be convinced if he could in March look into a colony wintered on honey and see the

bees as lively as in June and their stores largely consumed, and then look into one wintered on pure sugar syrup with the bees knotted together in a drowsy mass and their stores almost untouched.

But of course this marked difference does not always appear. The excitement of bees is always tempered by the difficulty of getting a load of honey after they have once reached it. You may expose well capped honey in your apiary in July with impunity, when extracted honey so exposed would cause an uproar. And right here I believe is one great advantage in having honey for winter stores well ripened and thoroughly capped. Even bees cannot get up much enthusiasm over honey as thick as tar in winter capped as with sheets of flat-bottomed foundation. Every bee-master will recognize this as being about the character stored in June and kept in the brood-chamber till autumn. Hence one reason for the superiority of early stored honey, and when there is enough of such honey in store, it is folly to extract it for the purpose of feeding sugar. With a little care, enough of such honey may be had nearly always in every part of the country more cheaply than sugar stores can be supplied, and may be used with reasonable assurance of safe wintering.

So when we consider that safe honey stores may be generally cheaply secured, the serious inconvenience of feeding bees after storing has ceased in the fall, the greater or less depletion which the colony undergoes in the operation, the consequent injury to the honey market, the suspicions of adulteration excited, and the unpleasantness there is in expending the amount necessary for the purchase of sugar, when there is plenty of honey on hand seeking a market, must, I think, always make the use of sugar for winter stores unpopular and exceptional.

Lapeer, Mich.

For the American Apiculturist.

CAN THE COST OF HONEY PRODUCTION BE LESSENED?

G. M. DOOLITTLE.

WHEN I first began keeping bees, the average price of comb honey was about 25 cents per pound in ordinary seasons; while in a very poor season like 1869, when but very little found its way into market, the enormous price of 50 cents was paid, or, at least that was the price offered me by a speculator for the little I had in that year. In 1873 the price advanced from the average, so that with good crops, I obtained an average of 27½ cents per pound for my honey that year and the two following. At the same time I readily sold extracted honey by the barrel of 500 pounds at 15 and 16 cents per pound. These were "*jolly*" times for bee-keepers and to see what my real profits were, over the cost of production, I kept an itemized account for one year, charging good wages for myself in addition to all other expenses. I now took my average yield for a term of years as a basis of the production from a single colony, then multiplied it by the number of colonies (100) I believed I could care for without hired help, thus getting the production of the whole. The total expenses were now divided by the average total production to find the actual cost of producing one pound of honey. This proved to be 15 cents for comb honey and 10 cents for extracted honey or

very nearly so. From this it is obvious to all how fast I was getting rich at that time from the actual profits, with honey selling at 27½ cents per pound. But with 1877, prices fell so that but few years elapsed before my honey did not net me after paying shipping expenses, etc., enough to pay my figured cost of production. I now began to ask myself what was to be done. Must I work for less wages than others of no better ability were receiving. at other employments? or should I give up the bee business and go into something else? It looked as if I must do one or the other. At about that time I saw that there was another way out of the difficulty and began asking myself if I was producing honey at the lowest minimum cost. I soon saw that I was not, and began figuring as to how I could lessen the cost of production; and here are some of the plans I have adopted looking toward that end.

First: I was in the habit of going through each colony as soon as bees could fly in the spring and taking-out each frame from the hive, noting the exact condition of the colony, amount of stores, age of the queen, and cleaning out all dead bees from the bottom of the hive. Of all this I kept a record which cost me much time. I often found that in less than a month from that time the condition of many of these colonies had so changed that this early work and record were of little value, so was a needless cost. What do I do now? I substitute a movable bottom board for the permanent one, go to a hive, lift the cover, set it on the ground, lift the hive, set it on the cover, clean the bottom board with one or two strokes of a broom, set the hive back, lift the cushion and quilt and run my eyes over the top of the frames for sealed honey, when the cushion and quilt are dropped in place again, cap put on and a little flat stone dropped on the cover of the hive to denote that this operation has been performed, and also to tell the amount of stores it contains by the position the stone occupies on the cover. In this way I do all that is necessary with four colonies in the time I used to spend on one. They are now left for a month (unless some must be fed) for I have found that early overhauling of bees can be a positive damage to them. Years before, during this time I was trying to spread the brood (if there was any to spread) contract the hives of all colonies, etc., so that here I make a great saving of time.

Again: weak colonies up to this time rear very little brood at best, no matter how closely their hive is contracted; and what little they do rear costs the life of ten bees to where one is hatched, hence spring dwindling is only accelerated. I next go over each hive, rapidly looking for the queen to clip her wings if she is not clipped and while doing this, turn the brood-nest inside out, so that the frames having the most brood in them are on the outside, and those having the least on the inside. In this way I perform two operations at once or "kill two birds with one stone," thus saving time, and I find that this change in the brood-nest never causes any chilling of brood, while in no way can greater stimulation to brood rearing be given. One more change of the brood-nest in about three weeks is all that is made; so that as a whole I do not now (as I used, when the estimate above was made) spend over one-fourth the time up to swarming on the bees; yet accomplish equally good results.

When swarming time arrives, I simply exchange the brood in the hive from which the swarm issued

for empty frames or frames of foundation (generally the former one,—the plan known as the Hutchinson plan, although that originated with me), while the swarm is in the air and hive them on the returning plan. The next day a virgin queen is given to the parent colony, which destroys the queen cell, so that no more swarming occurs, thus saving all cutting and hunting of queen cells. In this way the labor during swarming is reduced at least two-thirds. Then I used to fill the top of the hives with cut-straw, chaff or forest leaves, in the fall, to be removed at the time of putting on the surplus receptacles and thrown away, only to be gathered and renewed again the next fall. I now use sawdust cushions which are made at a cost of six cents each and will last, barring accidents, a life time. These cushions are manipulated in one-half the time the other material was.

Next, I so arrange that the honey is taken off by the wide frame full, instead of by the single section, and are handled in all the manipulation of carrying to the honey room, sulphuring, etc., up to crating; in this way four sections are handled in place of one, thus saving three-fourths of the labor. In this way I might go on telling of the labor saved when working for extracted honey; in similar manner, how I have bred up a better honey-gathering strain of bees; reduced the cost of my hives to the lowest possible figure, etc., etc., till I now count that I can produce a pound of comb honey for 10 cents, or a pound of extracted for 7 cents and yet give me the same price for my labor as before. As my comb honey has netted me 12½ cents per pound this season, it will be seen that I am still on the road to success if I am not too extravagant outside of beekeeping.

Borodino, N. Y.

For the American Apiculturist.

SHALL WE SELL OUR HONEY, OR "GIVE IT AWAY?"

C. W. Dayton.

During the past several years we have heard farmers complaining of the exorbitant charges of railroad corporations and of the profits of middle men. We should naturally suppose that, under these circumstances, they would use the railroads as little as possible and find customers for their products without the intervention of the middle man. We should scarcely expect that farmers would sell their hogs for instance, as many are now doing, for three cents per pound, pay freight on them to some distant city, pay a profit to the dealer, to the packer, to the wholesaler, and then buy hams and lard back again when they might as well kill their own hogs, cure their own pork, render their own lard, and sell them to their neighbors direct.

If one will look around him he cannot fail to see that it is simply custom running wild. It may be wondered what this has to do with bees or honey. It has not had much to do heretofore, but the time is drawing near when it is likely to have considerable to do with the profits of the apiary.

The profits of the apiary are becoming more dependent upon the sale of honey.

The increased production of honey has more than filled the receptacles, and where the beekeeper used to console himself with quietude of home on the down-hill side of his occupation, it is becoming a scene of distress and starvation, so strong an incentive does it require to drive an apiarist into the honey market.

It was a true statement that beekeeping was a fascinating pursuit; but that saying is too old. Many who loved ease and enjoyment found a livelihood in the product of a few

colonies of bees. The conditions at present are such that it requires four or five times as many colonies and the comparative amount of labor to yield the necessary income.

This is "too much fun for a shilling" and as a consequence the sound of discontentment and desertion is rife. From this time on, the apiarist must *labor* for his money. He must produce tons of honey where it used to be a few hundred. After having made up our minds to produce tons of honey instead of hundreds of pounds and market tons of honey in the place of pounds, our customers must purchase tons in the place of hundreds of pounds.

It is in no way likely that our appetites are going to require a larger amount of a luxury than before; but as the price of honey falls to the level with other sweets it would be only ordinary sagacity to introduce honey. It is every-day talk that sugars and syrups are adulterated and it should be nothing to be wondered at so long as there is a margin for profit. People know and expect everything to be adulterated, and that all investments depend upon their judgment. This is a lucky thing for the apiarist. I believe that very fact turns more in the honeyman's favor than any other one thing; as all he has to do is to establish his reputation for a pure article and his game is complete. A customer who cannot tell a first-class article of honey from adulteration is not worth having; but whatever a customer may be, if we give him poor and adulterated honey, we shall lose, but give him good honey and it will reclaim, him. The foregoing is theoretical.

This year my crop was from 800 to 10,000 pounds, nearly all extracted honey. It has nearly all been disposed of. All but about twenty-five pounds was handed directly from the wagon to the consumer. Grocerymen around here will not handle extracted honey except on commission or on trade. When I sell honey it is always spot cash. If a merchant cannot pay cash he is not my man to deal with.

My method of disposing of honey is what some around here are disposed to call peddling; yet these same ones were seen shipping two or three barrels to distant cities to be sold on commission. After long waiting, the returns were made at a low rate, barely enough to pay for the barrels and cartage; $2\frac{1}{8}$ cents per pound was the net price.

On each of four different days this fall, I retailed from the wagon into pitchers, pails and jars over 600 pounds of extracted honey at an average price of nine cents per pound. Giving them an equal chance, ten pounds of extracted sold to one pound of comb honey. But little theory in this. I sent to Stark Co., Ill., for honey when mine had nearly all been sold and yet there were apiarists in my vicinity who shipped honey to Stark Co., Ill., to find a market. "Distance lends enchantment to the view." The profits in shipping honey are mostly theory. The business itself is "custom running wild." The farmer is being outblundered.

Bradford, Iowa.

INVERTING THE BROOD-NEST.

PROF. A. J. COOK.

ONE of the late innovations in bee-keeping which has gained favor so rapidly that we must think it has come to stay, is that of inverting the frames or hives. In either case the brood-nest is turned upside down. This was first accomplished by so arranging the frames that they could be readily inverted. Instead of the old Langstroth frame with its single top-bar, which had project-

ing ends, a perfect rectangular frame, with no projecting bars, was made to swing in a larger frame with projecting top-bar and end-bars which reached a little below the middle point of the end-bars of the inner rectangular frame. By use of wire nails the inner frame is pivoted to the outer half-frame, so it can swing in and be inverted in a moment at any time. I have used these frames now for two years, and like them so well that I am changing all my combs into these reversible frames.

Within the last two years an attempt has been made to improve upon this plan by inverting the entire hive, which is about the size of the common Langstroth hive, and consists of two horizontal sections, which can be used either independently or together. Thus it will be seen that the frames in this hive are only about half as deep as those of the usual Langstroth. These frames have close-fitting end-bars, and when put into the hives, rest on tin projections, which are tacked to the bottom of the end-boards of the hive. When all the frames are put into the hives, a wooden thumb-screw, which is set in the side-board of the hive opposite the end-bars of the frames, is screwed up. This holds all the frames firmly, and so when these screws are thus turned the frames are all held securely, and the entire hive can be turned bottom up in a moment.

The advantages of inverting are: 1. Combs are built and fastened to the frames on all sides. Every beekeeper knows that bees always fasten combs firmly at the top and along the upper half of the edges. When this is once done we have only to remove the frames, when the union is made complete about the whole margin of the comb. The advantages of such entire union are, that the combs are held securely, and are in no danger of falling out when extracting or shipping bees.

2. The spaces between comb and frame, which serve as hiding-places for queens, are removed. This last is a great gain, as any one who has sought for queens is aware.

3. Reversing frames places the honey below the brood, which is unnatural. Hence, if just as the season opens, when we place the sections on the hive, we reverse the frames, the bees at once carry the honey above the brood, or into the sections, where we wish it, and once employed in filling the sections they make no halt till the season closes. If, when we reverse we uncap some of the honey, we shall hasten this rush to the sections. Many who have been annoyed at the persistent refusal of their bees to work in sections, will appreciate this argument in favor of reversible frames, though to the expert apiarist this is the weakest argument.

4. When a beekeeper has all the bees he wishes, he can preclude swarming by this simple work of inversion, which, in case the hive is reversible, is but the work of a moment. Curious as it may seem, the bees at once cut away or remove all queen cells as soon as the combs are turned upside down. Thus by inverting the hives each week swarming is prevented, and all but the work of a moment.

Of course this last, and indeed all the points, argue loudly in favor of the reversible hive. To invert a hive takes a moment; to reverse all the frames is the work of several minutes.—*Rural New Yorker.*

Agricultural College, Mich.

For the American Apiculturist.

THAT HARDWARE CLERK

Isn't dead yet, nor has he taken a back seat. In the "Api" for April '84, page 83, among other remarks, occurs the following by J. M Hicks: "We suggest that it would be well that all who contemplate trying to keep bees either on a small or large scale, should at least procure some good book or books, giving full instructions on the subject; also take some good bee journal giving lessons each month in the care and management of bees. We have noticed of late in some of the agricultural papers, articles defamatory as to the profits on bees, and the business of keeping bees, of which, all we have to say is, we do not wonder they write such articles, when they are engaged in so many other pursuits, either of which would afford ample labor for any one who is disposed to try to make a success at any occupation. For instance, we saw an article written by a man who, not long since, wrote us two long letters telling us how much labor he had to perform, which embraced four different occupations, viz.: hardware clerk, gardening, beekeeping and poultry raising, all of which, if taken together, are well calculated to burn at least some of the many irons placed in the fire at the same time, and yet we feel quite sure that if the gentleman's location is worth anything for either of the vocations mentioned and properly attended to, there need not be a failure in a single one."

Now I am that hardware clerk and propose to answer Mr. Hicks, though I have not had time to do so before. I will pass over the slur at a brother beekeeper as unworthy of notice. I will ask Mr. Hicks to point out to me *one line* in any article I ever wrote, where I said that my bees did not pay me. Long years of sickness, and death of a member of a man's family with consequent neglect of business in caring for the loved one, may bring financial distress to any one as it did to myself, and any man with a particle of grit would do his utmost to redeem his losses, and do that which he could best do to bring in immediate cash to meet pressing wants. Mine was just that case, and the hardware clerkship was the best opening I had. But Mr. Hicks forgets, or wilfully leaves out of sight, that I had my father to help me with the garden, fowls and watch the swarms, and that my place of employment was close home, and that I was allowed to run up and attend to any swarm that in any way bothered my father. My per cent of swarms is very small and easily taken care of. I had an *abundance* of surplus combs for extracting, and sections ready crated for comb honey, and it was easy to keep ahead by tiering up. Our bees are our main business, our garden and poultry yard are small, but are *well* taken care of and pay well. I have long since quit sending in "reports," but for once will break over. From fifty-six stocks, spring count, I took over 7,000 pounds of honey, 1,400 of which is comb, and my increase was but five, or sixty-one in the fall, and I earned, *cash*, for my summer's work over $250. Will Mr. Hicks please tell me what iron got burned, and can he make a better showing, with a steady drought from June 12 to Sept.? It is consistent (?) in Mr. Hicks to speak of too many irons in the fire. If his bee business alone pays him so well, why does he add to it architecture, beekeepers' supplies, lecturing, classes of beekeeping students, etc.? Why so many irons in the fire? Don't some of them get burned? I would advise Mr. Hicks to stick to his bees if he would make them profitable. I have never said that beekeeping did not pay, it has *always* paid me *well*. But I have fought and will continue to fight, with whatever influence I

may have, those "who are lauding beekeeping to the skies as an easy road to wealth, adapted to anybody and urging everybody to keep bees. These gentry try to crowd bees upon every one, and then howl about overproduction, low prices and no sale. If they would keep more quiet and let legitimate beekeepers alone in their business, we should have no trouble in selling our honey at paying prices. For myself, I can sell every pound of honey I can raise, be it one hundred pounds or a car load. In our own small circle here, our beekeepers keep quiet; no one knows how much honey we produce. The fever has died out, scarcely a small beekeeper is left to annoy with his cut on prices, and we have a steady sale at uniform prices.

WILL. M. KELLOGG.

Oneida, Ill.

DESIRABLE POINTS WHICH SHOULD BE COMBINED IN THE MODERN BEE-HIVE.

HENRY ALLEY.

1. The brood-nest should contain, according to the best authority and results of actual test, about 1,500 cubic inches.

2. The frames should be so constructed that the combs can be easily and quickly removed without killing or crushing any bees.

3. The brood-nest as well as the frames should be invertible, and the latter so constructed that they may be reversed singly or in a body. It often happens that, in handling, a comb will crack off, at or near the top-bar. If the frame can be inverted the bees will soon repair the damage.

4. The hive should be supplied with one or more division boards, or dummies, so that in case it is desirable to shut off the queen from any number of combs, or to close the colony down to a one frame, it may be done without much trouble. It is important to have the parts so arranged that all manipulation may be easily executed. A hive full of open joints or those that are too close, or one that requires much prying to open and pounding to put it together is a nuisance in any apiary.

5. A hive should be so constructed that it will winter a colony of bees safely on the summer stand, and be so light that it will not require the aid of several persons to carry into the bee-house or cellar. A hive that is three or four feet square, and is so large that it cannot be lifted by one person, does not come up to the requirements of modern bee-culture.

In case it is desirable to winter out of doors, the hive should be made so that it may be readily packed, and the packing as readily removed when necessary.

6. A hive should be so made that the surplus storage will admit of from one case of section to an unlimited number. The experience of the past season has demonstrated one fact to us, namely: that four racks of 24 one-pound sections each may be used on a hive at one time, and to the best advantage.

7. A hive should have not over eight brood-frames about the same size as are used in the Standard Langstroth. In this opinion we are backed by a large number of the experienced and practical apiarists in the country; in fact, no one claims that a large brood-nest is necessary in any case.

8. A hive should be convenient and practical and well adapted for either extracted or comb honey.

9. The most desirable hive is the one that requires the least amount of labor and lumber in its construction. Every part and piece should be gotten out with a circular saw,

and no planing or jointing should be necessary after it is ready to nail.

A hive should be so constructed that when packed for winter, water cannot reach the packing. One not so made is worthless for wintering use, and not as good as one not packed at all. All beekeepers know the importance of having the packing very dry and clean.

10. A hive should be adapted to either a hot or cold climate. One to combine the last two points should have a large open space under the combs and frames, as such a space affords ample ventilation both summer and winter. Bees in a hive thus constructed will not "lay out" in any climate, provided the entrance is a large one. Nor will the combs melt down in summer nor mould in winter.

For the American Apiculturist.

NOTES FROM CANADA.

R. F. HOLTERMAN.

First-class extracted honey is selling at 8 cents per lb. package extra or returnable. These are sales in wholesale lots. The retail price varies very much; 10 cents per lb. is probably the lowest and up to 15 cts. per lb. in beekeeping districts. Although honey is plentiful, there is far less upon the market now than a year ago, and especially is this the case with comb honey. There is very little first-class comb honey upon the market; the low prices paid for small and generally inferior lots early in the season has had a downward tendency in prices of comb; 15 cts. per lb. wholesale for first-class in pound sections is a fair price.

Canadians feel confident of having secured an opening for their honey in England. Mr. S. T. Pettit, the president of the O. B. Association, informed me that Canadian honey was far ahead of that from other colonies; and, if the English market were to remain open to us we might be able to satisfy the demand; and to do this at all, more large apiaries would have to be established in Canada. The problem as it stands is, shall we secure a solid footing at remunerative prices in England? If so, shall we be able to produce sufficient honey to keep up the supply as required?

Brantford, Ont.

QUERIES

and Answers by Practical Apiarists.

BREEDING BEES FOR QUALITY AND DESIRABLE TRAITS.

QUESTIONS BY ONE OF THE OLD ONES.

Query No. 1. What methods should be practised in breeding bees in order to perpetuate any desirable points or qualities? Which of the parents (drone or queen) is more likely to transmit to the offspring its peculiar points or characteristics?

Suppose one has colonies that are extra good honey-gatherers, very hardy and, in fact, perfect in all respects except that they are very cross and pretty sure to sting any one that approach the apiary; how can this most undesirable trait be bred out and, at the same time, all other desirable points retained?

ANSWERS BY JAMES HEDDON.

The breeder of any kind of stock must ever recognize the principles of evolution, the three main ones being heredity, variation, and that nature is at war with itself, or that one thing dies that another may live. Evolution brings about progress in nature through the three foregoing laws, but man uses the first two and manipulates according to his judgment and aims in place of the third. Nature being at war with itself leaves only the *fittest* to survive, as the survivors, while we manipulate in such a man-

ner as to cause the survival of those specimens which are best fitted to accomplish our purposes.

According to the law of heredity, Italian bees will reproduce Italian bees and German bees will reproduce German bees, but, the reproduced bees in either case will not be precisely like their parents, either in appearance or characteristics. The law of variation prevents that. It is by taking advantage of these variations that we are enabled to select as parents for a coming queen specimens that are superior to their parents. Hybrids will, according to the law of heredity, reproduce hybrids, but the law of variation will be greater among these crosses and this enlarges our opportunity to take advantage in selecting. It will now be plainly seen that to improve stock by breeding, we only have to be wise and careful in making our selections to breed from. I find that with bees the offspring follows the law of heredity more perfectly after the drone; and the law of variation, more after the queen, so that we may say the drone is most apt to transmit its characteristics to the offspring. As many of your readers are aware, nearly ten years ago I began breeding toward a fixed strain of bees by crossing the best strains of Germans with the best strains of Italians. I say best strains of these races, because with each race in its purity there is an undisputed vast difference in the qualities of different strains or families. I am still using this strain of bees, and like lawyer R. L. Taylor, whose able article appeared on the first page of your last issue, I would not exchange them for any other bees known to civilization.

I obtained my best crosses from Italian drones of the long leather-colored strain, and German queens from the large, brown or gray variety, and by crossing and recrossing these hybrids ever since, always selecting my breeding queens and drones from colonies which possess most of desirable and least undesirable qualities, I have bred up a well nigh fixed strain of hybrid bees that are better suited to my business than any others of which I have any knowledge.

Your query asks how to get rid of irascibility in bees; and I have most perfectly accomplished that with these hybrids, as scores will come forward and testify. I will proceed to tell how I did it.

Those older than I in experience with Italian bees told me I would find them better natured than Germans but I must look out for crosses of the races for they would be far more irascible than either race in its purity. Upon trial, I thought I verified the statement. It did seem strange that a mixture of sugar and sawdust could be sweeter than either one in its purity, and so I began experimenting, observing and drawing deductions. My conclusions are these: good nature belongs with the dark races of bees. Belligerency is characteristic of the yellow races. The mistaken idea that Italians are better natured than Germans comes from the fact that the operator gets less stings when handling them. This comes about from the fact that nine-tenths of the stings we receive are from bees that take wing. Now, although Italian bees are twice as ferocious as Germans, not more than one-sixth as many take wing while being handled; and as bees do not sting while steadfast on the combs, our chances for being stung would not be one-half as great with Italian bees. Let us take a yellow race that flies around loose like Germans, having the true irascibility of yellow bees,—the Cyprians for instance.

I need'nt tell you about these bees. If their blood is not eradicated from this country, we will have more lawsuits than the Beekeepers' Union can defend.

I claim that when I cross the belligerent Italian with the peaceful

German, the irascibility of the offspring will be an average medium of that of the parents, and if these hybrids inherit (as is usual) the tight-footedness of the Italians they will be the best behaved bees and easiest to handle that can possibly be produced. On the other hand, if they inherit the German tendency to fly about and fall from the combs, you will have the naughty hybrids." These hybrid bees are the pride of comb-honey producers, and I believe that to-day there will be no question regarding their superiority over all other bees (all points considered) were it not for this "naughtiness." This is easily avoided by rearing German or hybrid queens and crossing them with Italian or hybrid drones, always choosing drones (and queens too when using hybrids) from colonies having this fast-footed tendency. If you will observe this one feature and those of good comb-building and honey-storing qualities, and breed from such stocks only (and you can find plenty of them in an apiary of a hundred colonies), you will soon have the best bees in the world. This is what I believe, and I believe it from years of experience. By the use of full sheets of foundation we govern the production of drone comb. We have a dozen or more hives replete with drone comb, and in these hives we keep none but the desired stock. You know we can rear from any mother we choose. Having practised this system for several years, I need not tell you I am little interested in the question of "Artificial Fertilization." Rear as many queens from a colony as they will give you in perfection. Rear at that time of the year that supplies the natural and necessary conditions. These vary with climate, locality, and peculiarity of seasons. Be a law unto yourself. Study your business before you attempt to succeed at it. Use tact, as well as talent.

If you do all this, you will not only produce "Apis Americana" but the best bees known to scientific Apiculture.

ANSWERS BY DR. TINKER.

As a rule the drone is prepotent in transmitting *working qualities; the disposition; the workings* and *the form and size of the male progeny.*

The queen is prepotent in transmitting *fecundity; the comb-building faculty; the peculiar maternal instinct and the form and size of the female progeny.*

I have given emphasis to the above points that they may stand out clearly to all who read them; no rule, however, in the heredity of bees is invariable. Exceptions to establish rules occur in the heredity of all the animal creation. The causes of the exceptions I have never been able to discover, but they are so few that the rules can be depended upon in developing a superior strain of bees. The influence of the drone upon drones does not distinctly appear until in the second generation; then the form, size and color are very certain of reappearance. For instance, if dark drones of large size are kept for breeding stock, it will not be many years in an Italian apiary before all the drones will be large and dark. The certainty of dark worker progeny from dark drone parentage is very remarkable, no matter how light-colored the queens may be.

In the case given, to suppress the ugly temper, the drones of those colonies must be destroyed and drones from gentle stocks of good working qualities supplied in their place. A second cross in this way will breed out the undesirable trait. If one has a colony of splendid workers and has regard only for the perpetuation of the one

prominent trait, then the drones of such colony should be bred from and the working quality will pass on through the line of drones; but the disposition will be sure to go with them and lose nothing of the original fire.

It has been said, or at least inferred, that one cannot breed for beauty and good working qualities at the same time. I say that we can, for some of the best working colonies I have seen produced the largest and most beautiful drones. My best stock the past season that produced the most comb honey, bred such drones, having also wings of remarkable length and breadth. The drones of this stock will be taken to my isolated mating station next season.

The best time to rear queens is any time when the bees are inclined to rear drones, or from the fifteenth of May until the twentieth of August in this locality.

The coming bee will be a cross bred bee developed from Syrian or Cyprian mother stock. The cross will be with Italian drones.

The best queens will be reared by the natural method, or one so near like it that it may be termed a natural method. A very common, unnatural method and one that produces the poorest, average queens, especially when no nectar is coming in, is where a comb of just-hatching brood is transferred from the breeding stock to a queenless stock. The bees recognize that the brood is not their own and refuse to feed the royal foster larvæ as they should. If a drought prevails, they will tear down every cell soon after it is finished in many cases, but under like conditions bees that rear queens from their own brood, on their own combs, will not destroy their cells, and they will hatch out fair-sized queens, while the foster queens, reared as above, that may be spared to hatch, will be small and worthless.

To rear fine queens out of season and at an unfavorable time, take from a colony its queen. In three days thereafter take out the larvæ from the formed queen cells and introduce in their place small larvæ (as they lay in the worker cells not larger than one-sixteenth of an inch across) from the best breeding stock. The bees fail to recognize the change made, and as the larvæ get a big start in the royal food in the cells, they make the largest queens it is possible to produce.

ANSWERS BY G. W. DEMAREE.

The same general rules which apply to successful breeding of domestic animals, will apply to the breeding of bees. But when we look about us we are prepared to see that nature's laws are not as narrow as are the minds of some men, as though confined between two great walls, the one on the right and the other on the left. So far as fundamental principles are concerned, induction into life is by one and the same law. But in the economy of nature there is a wonderful diversity, and this diversity is without contrariety. In the economy of higher animal life as a rule, the male is stronger and more powerful in constitution than is the female. This is so striking to every observer that common consent accords to the male the greater influence in the way of transmission of the stronger traits to the offspring. But the question arises, Can we judge bees by this rule? In the economy of the bee hive, the drone or male bee is a mere "figure head," so far as character is concerned. He has but *one* office, and that is to aid in the propagation of the race.

He has no weapons of defence, therefore cannot aid in defending the common interest of the colony. He cannot be of material use to the thriving family in the spring, because

he does not appear on the scene till all danger of chilling brood is past. Hence, his presence to help warm the hive is merely a dream of some who are not satisfied with the facts that the drone has but one function in the economy of bee life. But on the other hand, that the drone has no weapons of defence, bears persecution patiently, and submits to his fate when he can do no better, are, to my mind, no evidence that he is a coward.

I wish to record here my convictions, after long observation, that the male honey bee, or drone, is thoroughly "game," though powerless to resent an indignity. With these things alone before me, I confess that I could not decide with any satisfaction to myself as to the potency of the sex in the economy of bee life. It required practical experiment to satisfy me on this point. Well, when Mr. Jones made his first importation of pure Cyprian bees to this country, I procured through Mr. A. I. Root a piece of comb containing some newly hatched larvæ, and some freshly laid eggs, by one of the first Cyprian queens imported by Mr. Jones. From this piece of comb I reared seven queens, and got six of them mated by Italian drones, and contrary to my expectation the worker bees of these queens were exceedingly quiet and gentle. The following season I had plenty of pure Cyprian drones, in accordance with the Dzierzon theory, and I found that when these Cyprian drones mated with a queen, her progeny was fierce and unmanageable. I found also, that the same phenomena showed themselves when crossing black and Italian bees. A black queen mated by an Italian drone gives gentle workers, while an Italian queen mated by a black drone gives fierce and spiteful hybrids. Such I have found to be a general rule. I therefore conclude that the queen transmits nearly all the qualities that go to make up the character of the worker bees except as to temperament. The potency of the drone prevails when it comes to transmitting temperament and in no other respect. Now for the application.

When selecting my breeding stock, the "queen mother" must represent the type or qualities I wish to develop. I have never been able to rear good bees from an inferior mother, no matter what were the mothers of the drones that were to mate the queens. I look to my breeding queens for the peculiar type of workers I want, and to the drones for temperament. Had I such a colony as is described in the second paragraph of the query, I should rear queens from the "high-strung" mother and have them mated by drones from gentle Italian colonies, and thus I should expect to tone down the high temper without changing any other qualities in the workers.

To perpetuate certain qualities in bees, we must go on breeding from such queens as show most distinctly the desirable traits, and observe as to whether we progress toward the desired end. Perseverance alone will bring success. Since we may now use drone guards and drone traps, and thus control the males as well as the females, we may get on with much more certainty than we could heretofore.

ANSWERS BY J. E. POND.

This query opens up the question of the way and manner of improving stock of all kinds; and the same rule that applies to cattle, horses and fowls will apply to bees, in a somewhat modified form. The rule in farm stock, generally, is to breed from the best specimens, always taking into consideration as an important factor, the desirable points to be perpetuated, and the eradication of undesirable qualities. This can easily be done (though it takes a

long time to fix any given trait) with stock generally, as we can study individual specimens both of the sire and dam, and can choose at all times on both sides of parentage. With our bees we cannot do this with certainty. It is true we have the control largely of our queens, but as yet, in the choice of drones we cannot make individual selections; consequently we have to choose wholly from the queens.

In choosing queens, equally as much attention should be paid to her drone as to her worker brood, and in the selection of drone mothers we should endeavor to choose those that have proven themselves to possess the greatest amount of *best* characteristics. My opinion is that the drone parent is more likely to govern than the queen in fixing points; for that reason I should prefer to breed in-and-in for many generations, than to use the drone progeny of a queen known to possess undesirable qualities. If we could select individual drones for fathers, the matter would be quite simple. As it is we can only select the drone progeny of a given colony, running the chance of the individual the queen will meet. In answering this query we are tied down to generalities, and cannot give strict rules.

In the matter of breeding out crossness, we must first ascertain from which side the crossness originates. If from the queen, one plan may be adopted; if from the drone, another. We must bear in mind all the time, though, that a change of queens may bring about the result of losing the honey-gathering quality. It will be impossible to lay down any rules in the matter that the novice can apply, or that any one in fact can apply with certainty unless he is familiar with the laws of breeding and cross-breeding, and the results that follow therein. It is safe to say, however, that the best results can only be attained by using equal care, judgment and discretion in the choice of sire as of dam; and that by intelligent selection of both, as well as by judicious in-and-in breeding we can create and fix such points as we desire.

WHY DO BEES SWARM?

QUESTIONS BY ONE INTERESTED IN BEE-CULTURE.

Query No. 2. This question has often been asked but not satisfactorily explained. Perhaps at this enlightened age some one of our "big" bee-men may be able to throw more light upon this point than has been done in the past.

The querist has known bees to swarm when the flowers yielded barely sufficient nectar to sustain the bees one day, and this at the height of the honey harvest; but the bees swarmed about the same as they usually do when there is a plentiful supply of forage for them to gather. Then again, I have known seasons when there was an abundance of honey in the flowers and the bees doing well, but few or no swarms issued. How can this be accounted for?

ANSWERS BY G. W. DEMAREE.

It is not difficult for a man to work himself up to that state of mind that he will not be satisfied with well-established facts, because he cannot reason out every minutia connected with it.

This question has been answered scores of times to my entire satisfaction. Swarming is Nature's method of multiplying and replenishing the earth with bees. The impulse to swarm is as natural in bees, as the impulse to incubate or "set" is natural with hens, birds, etc.

Ought this not to be entirely satisfactory? But then the querist has seen bees "swarm" in and out of season. So have the rest of us, and if it were so, that we could not reason out this irregularity of things, it would not overthrow the fundamental principles governing the action of bees as pertain to nature's plan of multiplying the race. It is a well-

known fact that bees supersede their queens when they become old or otherwise defective, and when an apiary contains a large number of old queens, at the beginning of the swarming season, there will most likely be excessive swarming, because the desire on the part of the bees to supersede their old queens will intensify the desire to swarm; and, having swarmed, if the old queen is not too far spent in strength, she may be the cause of a swarm casting a swarm. I once had a swarm that cast a swarm in just a week after they were hived, because they had an old queen. Sometimes bees will prepare to swarm by starting queen cells, and though the honey flow shuts down suddenly, they will swarm any how, though there is nothing to be had from the fields. In these cases they swarm because they want to supersede their queen, and their attempt to do so leads to a swarm. I frequently rear queens in March to supply queenless colonies in the spring. Well, I never knew one of these colonies having a strong young queen to cast a swarm the first season. From observations I have made, I feel certain that if I had young, vigorous queens in all my colonies, I mean queens reared and mated in the early spring before swarming time, I should not have a single swarm during the season, no matter how populous the colonies became, provided they were supplied with plenty of room as fast as they needed it; and if all my queens were just one year old, I should expect an increase in an average season of not more than ten per cent. If the queens were all two years old, I should expect thirty or forty per cent of increase, and if my queens were all three years old, I should look for nearly one hundred per cent of prime swarms. Hence, I conclude that while nature has inbred into bees the instinctive desire to multiply the race by dividing off into new swarms or colonies and thus forming new commonwealths, there are many conditions likely to intervene and prevent uniformity of results.

Christiansburg, Ky.

ANSWERS BY J. E. POND.

This question, like No. 1, is largely theoretical. We only *know* that swarming is the natural way by which bees "multiply and replenish;" and the answer might well be given, "because they are made that way." We know, by studying comparative anatomy, and the laws that govern procreation, that conception does not follow every cohabitation; if it did, the world would soon be far too small to accommodate the life thus brought into being. In a state of nature, the excess is kept down by war, pestilence and famine, among the human race; and in the struggle for life among the lower orders, the doctrine of the "survival of the fittest" applies now in swarming. Bees must live, and only can live in colonies. They must swarm in order to increase; the rule being that when a given hive is well filled with brood and stores, and the indications are, that stores will continue to be gathered, the swarm will issue to set up a new home. The exceptions prove the rule, and we can not determine why a given swarm issues under disadvantageous circumstances, or does not issue when circumstances seem most favorable. In other words: we know that certain forces exist in nature, and that certain results follow certain causes. Grass grows; why or by what means we know not. Grain is changed into animal food products by digestion; how, we know not. So in the matter of swarming, the rule governs. And it is the rule that a crowded hive will cast a swarm, while one that has ample room will not. To undertake to explain the contraries of swarming will be to simply theorize on the subject: as

Mrs. Tupper well says," Bees do nothing invariably," and swarming or non-swarming falls within that rule.

The whole science of beekeeping is made up of the application of a few general rules to our knowledge of the nature and habits of the bees. We cannot drive nor force them; We can to a certain extent lead them, and in the matter of swarming we have through the invention of "Alley's queen and drone trap" a certain means of prevention. This being the case the chief point desired to be answered, is of little interest, as the matter is now wholly within our control.

ANSWERS BY DR. TINKER.

Swarming is impelled and exacted by the insoluble enigma of instinct. It is nature's provision for the propagation and extension of the honey bee, and no artifice of man will ever prevent it. Inbred and nurtured through all the ages, it comes down to us as a fixed law of the bees' life whose impulse we can no more alter or divert from an attempted fulfilment of its purpose than we can prevent the rain or the sunshine of heaven. The conditions, propitious of swarming, are many; a brood-chamber crowded with young bees and hatching brood in the combs being one of the most favorable. The season of the year has also something to do with it; for the bees begin the preparations long before the harvest begins in rearing a stock of drones. Then they make the queen cups ready for the queen to lay in them and yet the harvest is not at hand. The queen deposits the royal eggs and when the cells are capped over the bees swarm, often before there are barely sufficient nectar and pollen coming in to support the growing brood. When there is an abundance of nectar in the flowers following a prolonged scarcity, as is often the case in the spring, the bees would not have a superabundance of young bees or be inclined to swarm until they had. In fact, the over populous brood-chamber is nearly always present before swarming. It is on this account that colonies having very prolific queens are more inclined to swarm than others. They soon become crowded and overheated and then think about swarming. Again, although the preparations have been made for swarming, it happens that the weather is only moderately warm, and the bees are not so crowded as to suffer from overheating, and such weather may continue until the failure of nectar in the flowers. But when a few very warm days set in, the other conditions being favorable, the swarming fever rapidly develops and cannot be wholly prevented by extracting or other means.

PREVENTION OF INCREASE.

Query No. 3. Suppose a person has all the bees he can manage profitably, and there is no sale for the surplus swarms, what is the most practical method one can adopt in order to keep an apiary down to about fifty colonies? Of course more or less swarms will issue each season. Now, would you advise one to hive the new swarms and in the fall destroy an equal number of old ones? or would it be better to return all swarms as they issue, letting the queens care for themselves?

L. C. M.

ANSWERS BY WILL M. KELLOGG.

In answer to the questions of your correspondent, L. C. M., I will say that he has described exactly my own condition of affairs, no sale for bees and no desire for increase. I range from sixty to seventy swarms, and the method I follow produces the result I try for. Each one has his own method, and I will give mine.

But first I will say that I *don't know* how to control swarming with small hives. I can't do it by any ordinary practical work. I use a large hive, 10 and 12 frames, the 12 frame hive is 18 inches wide, 15 inches front to back, and 13 inches deep, all inside measure. The 10 frame hive is just 15 inches square and 13 deep. Frames are made to fit accordingly. For my 60 hives I have some 60 full depth, upper-story hives full of empty comb, and 70 six inch extracting cases (equal to 35 full hives) also full of empty combs. With these I also have 70 or 80 comb honey cases, holding from 21 to 27 one-half pound sections each; so that I can give each stock two extra stories and have a reserve of nearly another for each. When my honey flow begins (white clover in first part of June) I watch the top of the brood combs, and as soon as the most of them are capped with new white comb, I give all such an upper story, and as my stocks are strong at this time, and the combs are sticky with honey from the previous season's extracting, the bees go at them with a rush. So also with my cases of sections for comb honey; there are in each a few partly filled with comb, from which the honey was extracted the fall before. In case I can't get around to extract or remove full sections, and the honey flow continues and the bees are capping the upper story again, I place on another; I don't go to the trouble of lifting the heavy stories, and rousing up the bees, but quietly get it on top; the bees will "get there" fast enough. By keeping ahead of the bees with plenty of storage room, placing it on before they begin to feel crowded, I keep down the desire for immigration to such a degree that not over ten per cent of my stocks swarm at all. When a swarm comes off, I wait till they are nearly done coming out, then lift off whatever upper stories may be on, take out each brood comb looking it carefully over, pinching off every queen cell and incipient queen cell cup, also take out three or four full combs of honey and replace with empty ones, put back the upper stories again, and hive the swarm back into its old hive. It is *very* seldom that I am ever troubled with such stocks swarming again. Each upper story has an entrance, and my bees may be seen working out of two or three besides the lower one. Let others' experience be what it may, mine is that *plenty of room in time* will prevent a large amount of swarming.

Hiving the new swarms and killing off an equal number of old ones in the fall, entail a deal of tiresome work, extra combs of brood to dispose of and keep the *old* queens, killing off the new ones in the old stocks. Returning swarms, and letting queens take care of themselves, will result in either that queen or a young one hatched later coming out again, with the vexation of second swarms. Queens of new or old stocks can be killed in August, queen cells pinched out eight or nine days later, and the stock will go on storing honey, and growing smaller in numbers, till cold weather will find but few bees to dispose of. But as queenless stocks go on gathering pollen as usual, with no brood to use it up, the combs will have an excess of it, so that this course has little to commend it.

PITCHED OR FLAT-ROOF FOR TOP OF HIVES, COLOR TO PAINT THEM.

QUESTION BY WM. C. R.

Query No. 4. I am a novice in beekeeping and desire to have a little knowledge about hives. Please answer the following questions through the APICULTURIST.

1. Would you advise one to make his hives with a pitch or flat-roof? There are some disadvantages as well as advantages in having hives with a pitch roof.

2. Will not a flat roof shed the water sufficiently to keep the interior of the hive dry and answer every purpose equally as well as the pitch roof?

3. What color should hives be painted considering taste and durability?

ANSWERS BY DR. TINKER.

1. I advise the flat roof made of a whole board cleated at the ends. Two or more pieces of board may be used, the joint being covered by a long strip of tin cut two inches wide, to be laid in paint and braded down at the edges. A very wide cover can be made in this way, that will never leak a drop, if freshly painted every two or three years. I know of no advantage of a pitch roof over a flat one. The former is the more expensive, is the heavier to handle and requires more paint to keep in order. The board should be wide enough to extend over the sides one inch and over the front and rear ends of the hive, two inches.

The cleats should be grooved in the sides to fit on the end of the board. If the location is subject to high winds, the board is weighted on the hive but if it is made to project over the edges of the hive not more than is above recommended it takes a very hard wind to blow one off, when not weighted.

2. Yes.

3. I prefer white but have red, white and blue colors used so as to present a very tasty and attractive appearance.

MOVING BEES.

Tiffin, Johnson Co., Iowa, Dec. 9, 1886.

I would like a question or two answered in the "Apiculturist."

1st. I am going to remove my apiary about 250 miles by railroad next spring. Could they be successfully moved the middle of April?

2nd. How would you prepare the hives for the journey, how much ventilation is required on top and bottom so that any one could move them with the least damage.

3rd. Mine is the Langstroth frame. Now would wire nails driven through the top bar in the wood rabbet hold them in place, or screws, be a good plan to hold them or how is the best plan to fix them?

S. E. R.

ANSWERS BY H. ALLEY.

1 & 2. Yes, you can move the bees as far as you please at most any time during the month of April. I have found April and October the two most favorable months in the year for moving bees. In the latter month the bees have no brood later than about the 10th while in April they will have more or less, yet the weather is usually quite cool, and the bees do not become uneasy nor do they seem to suffer for water while confined in the hives as they do later in the season when the weather is warmer. However, if one has a large number of colonies to move 250 miles, an attendant should accompany them; supply each colony with, at least, half a pint of water each day, if the bees are to be fastened more than one day in the hives.

A colony will need very little upward ventilation in April while being moved and a wire-screen at the entrance, if so constructed that the wire will not come within one inch of the front of the hive, will furnish all the air the strongest colony will need. If your hives have porticos, as Mr. Langstroth used to make them, wire-cloth can be nailed to cover the front of the hive which would answer as well as a wire-screen, and such an arrangement would give ample ventilation at most any month in the year, provided the entrance is three-eighths of an inch and full width of the hive.

3. Nail the frames at each end to the rabbet, with one-inch wire nails, but do not drive them clear in as there would be considerable trouble to draw them out. When they are all nailed, one or more strips of wood, one inch wide and as long as the hive is wide and a fraction thicker than the

bee space between the honey-board and top of frames, should run crosswise the frames (about middle way the hive), so that when the honey-board is nailed on, this strip of wood will bear slightly on the frames and keep them from moving about. Hives thus prepared may be inverted; and, if any of them contain new combs, they certainly should be turned bottom upwards while being transported, especially if the combs are heavy with honey or brood.

If the bees are to go by rail the hives should be placed directly on the car bottom, and the combs should run lengthwise the car, and no damage will be done to them while the train is "backing and filling" at way stations. The doors of a car that has several hundreds of colonies of bees in it should not be closed and sealed as is usually done on all railroads. A person should accompany the bees not only to furnish water, but also to look after them and to keep the door of the car open at the side opposite the sun. Most freight cars are painted red, or some color which "draws" the rays of the sun, and heat up like an oven; and should one of those warm days occur as they do sometimes in April, it would be hard on the bees.

EDITORIAL.

The Home Market, or Sale of Honey.—There seems to be a healthy agitation going on at present in respect to the sale of honey.

The "American Bee Journal" has just advanced a plan, though it is not new by any means, for the sale of all of the honey that can be produced. The *patent* on this plan, we think should be awarded to another person however; for if one turns to page 460, Vol. 14, of "Gleanings," this plan is outlined by Mr. J. H. Martin of Hartford, N. Y.; the same writer has also given similar views in various numbers of the APICULTURIST.

We are, however, glad to see several minds at work upon this problem. Great good will certainly be the outcome from it.

The unequal distribution is evident to the observing man and if the producer would sell his honey in country villages and to his neighbors, at the price the commission man pays him, there would be but little left to ship to the city markets, and we think there would not be honey enough to go around.

There is not a country market where honey is kept on sale all the year round. If honey were kept prominently before people as certain lines of pickles or chow-chow, there would be much more sold.

The beekeeping pursuit is away behind everything else in its method of advertising; even our county fairs, the place above all others for calling people's attention to our product, is in a great measure neglected. If it pays to advertise every other thing under the sun, it pays to advertise honey. It pays to circulate leaflets. If those already printed by different publishers don't suit the locality, print one that does; distribute fancy cards with your business and you will sell honey directly *under the nose* of the beekeeper who doesn't advertise.

There is at present a great complaint about low prices, but five cents per pound for extracted and ten cents for comb honey ought not to scare the enterprising producer. It will cause it to be put into the hands of thousands who never tasted honey before. It will, furthermore, have a tendency to make it a staple article.

A few years ago, petroleum was discovered, and millions of gallons were allowed to run to waste, because there was no market for it, but it was soon discovered that many

uses could be made of it and now there is a market at good prices for all that flows.

Again, low prices are not confined to honey. The poultry business has been under the same cloud for several months and the markets all over the country are overloaded and thousands of "Thanksgiving turkeys are still unpicked," and will have to be sold at very low prices. It is so with beef; the great West can put down better and cheaper fatted meat of all kinds than we in the east can raise it.

All lines of merchandise are low. Clothing, for instance, can be produced at low rates, if you are disposed to be economical, twenty dollars will clothe you superbly for a year, and honey at five cents per pound will pay better now than ten cents per pound a few years ago.

During the near future, beekeepers will raise their honey cheaper and with less manipulation than ever before, and a man will care for 400 colonies as easily as he now does for 200. And now that development of the home market is agitating our minds, we see great things in store for us in the future.

We had a suggestion in reference to the above point for the consideration of the National Convention, but not even the slightest notice was taken of it. Perhaps it was one of our cranky ideas. By the way, for what purpose did the National Convention meet? We cannot make the discovery by reading its reports.

Bee Literature.—The most interesting essay read at the Indianapolis Convention was by Mr. Thomas G. Newman, Editor of the "American Bee Journal." We make the following quotation:

"Ages before the creation of man on this planet, the flowering plants demanded insect fertilization, and doubtless the bee was there to scatter the pollen masses, fertilize the flowers and gather the honey. Then there were no sheep-bee lawsuits, nor controversies concerning bees and grapes. These "luxuries" are a modern invention, and belong to the nineteenth century.

The writers of the Bible tell us of the early races of bees, and describe the "land flowing with milk and honey." The records of the Egyptians and the Chinese, cut in stone, show that bees were known to them as faithful servants that gathered the sweets of the earth for their use. Three hundred years before the Christian era, Aristotle affirmed that the bee was "a magazine of all the virtues" and Virgil, the noted Latin poet, calls it "a ray of divinity." Shakespeare and Milton devoted to it their thoughts and words of praise.

It was estimated, over three hundred years ago, by De Montfort, who then wrote a work on bees in French, that between 500 and 600 authors had preceded him on the subject of beekeeping. Most of the books were written in Latin, and are lost to the world; and but few have been handed down to us."

Mr. L. C. Root of Mohawk, N. Y., offers for sale a part of his bees and all his fixtures, as well as the best location for an apiary in New York. Mr. Root has been unwell for several years and is now compelled to leave his native state to seek a more congenial climate, hoping thereby to regain his former good health.

Any of our readers, desiring to make beekeeping a business, will find it to their advantage to investigate these advantages before purchasing elsewhere.

Mr. Root has purchased a property in Stamford, Conn., whither he will soon remove.

"All Bosh" is all the reply a man makes (who does not know what he is talking about) to a statement of facts. Well, that argument will do under the circumstances.

It was stated in a recent number of the APICULTURIST that the beautiful color and peculiarities of the Albino bee were developed and perpetuated by in-breeding. When anyone can disprove the facts and tell us how it is done, then we are ready to own up to it that our "statement is all bosh."

A New Section Case.— Mr. Hilas D. Davis has kindly sent us one of his new section cases. As it is new to us, we will let him give its good points in the following quotation taken from his letter:

I, as well as a number of other parties, tested this case, and have a good reason to state we can get from its use, at least, one-third more honey, with better filled sections, and less soiling of the cappings. The double separator overcomes the difficulty of choking up the passage way in the tiering-up method. That is, the bees have a passage way from one tier to another without interfering with the comb builders, or clusters in the box.

Mistakes will Happen. — On page 282, December number of the "Api," we credited answers to questions to A. E. Manum. This was a mistake, the answers were given by Dr. G. L. Tinker. Mistakes, you know, will happen.

The Apiculturist goes to press on the 20th of each month, and is mailed to its subscribers five days later. If any one does not receive it in the course of ten days from the date of mailing, they should notify us at once and we will forward another copy.

The Quinby Smoker.— A description of the improvement made in this well-known smoker was given in the "Api" some time ago. We now have a lot of them on hand. This smoker, as now made, is the most perfect of any bellows-smoker in the market. The good points are these: if the fuel is dry, a smoke can be had in a minute's time by merely applying a lighted match to the "fire-hole" at the base of the barrel. Those who use the old style Quinby smoker are obliged to go to the stove for a coal of fire in order to ignite the punk.

To New Subscribers and Renewals.—Each yearly subscriber to the Apiculturist will receive free, by mail, one of our latest improved drone and queen-traps (the regular price of which is 65 cents), thus reducing the price of the "Api" per year to 35 cents. As the traps cannot be sent, by mail, to Canada, the price of the Apiculturist to Canadian subscribers will be 75 cents.

We guarantee the drone and queen-trap to give perfect satisfaction in all cases. If it does not work as well as stated, the trap may be returned to us, at our expense, and we will return or credit the amount paid for it. Remember that the trap will save ten times its cost to any bee-keeper in our season. No swarm can abscond, nor will any valuable queens be lost. When a colony swarms, if the trap is used, the bee-keeper need pay no attention whatever to the bees, but at once make preparations to hive them as they will surely return to the spot from which they start. If three or more swarms issue at one time, each colony will, when it misses its queen, return to the parent hive. If swarms issue and the beekeeper cannot attend to them, or is absent from home, the bees will return to their hive and come off again the next fair day. Or, if desirable, while the bees are in the air, the queen-cells may be destroyed and swarming will be given up altogether, or, at least, they will not issue again for four days. If the bees issue from a reversible hive, the brood-chamber may be inverted which operation will certainly prevent any further swarming for the season. Bear in mind that the trap gives perfect control over swarming.

The best, quickest and easiest way to hive a new swarm is to remove the parent hive a few feet back, and place the new hive on the old stand. The bees will return and enter the new hive, and the queen may then be released and allowed to run in with them.

There are 50,000 of the traps in use, and, so far as we know, they have given satisfaction in every case.

The trap will be sent by mail for 65 cents, or one dozen in the flat, one

made up, thirteen in all, by express, for $3.50. 10 per cent discount to all who order before February 1, 1887.

Our Premium List.— We wish to say to the readers of the APICULTURIST that we do not offer but one premium for one subscription. To be more explicit, a subscriber who sends us $1.50 for the "API" one year and the Beekeepers' Handy Book is not entitled to a queen by remitting 50 cents more. Our intention is to sell some one article we have in our price list at a discount of about 50 cents, thus reducing the regular subscription price of the APICULTURIST to 50 cents per annum.

Any subscriber, who does not need the articles we offer at such reduced rates, can find some beekeeping friend or neighbor who will purchase them.

Many of our subscribers find some one who is in need of a first-class queen and so they engage a queen at $1.00 and then send $1.50 for the "API" and queen. Thus you see the purchaser gets a fine first-class queen for $1.00, the same as other dealers charge $1.50 for, while the "API" costs him but 50 cents. Barter among yourselves and thus get many valuable articles at a low figure; besides we will try and give you a journal, worth at least, all it cost you.

"Subscription expired" will be stamped on the wrappers of all whose subscriptions expire with any number of the APICULTURIST. If the reader desires the paper continued we shall be glad to do so, provided he makes known his wishes by dropping us a postal card. Otherwise the "APICULTURIST" will be discontinued when the subscription expires. We invite all to renew and send us with their own subscription at least one new one. All who will do so may deduct twenty per cent for the trouble they take in the matter.

"A Year among the Bees" is the title of a most excellent work on bees, by Dr. C. C. Miller of Marengo, Ill. I have been looking this book over of late, and as queen-rearing is our hobby, I naturally turned to that part of the treatise containing the author's ideas on this point. Dr. Miller gives his method for rearing queens which is about the same as has been practised by most beekeepers for the past thirty years, except in one point. He says:

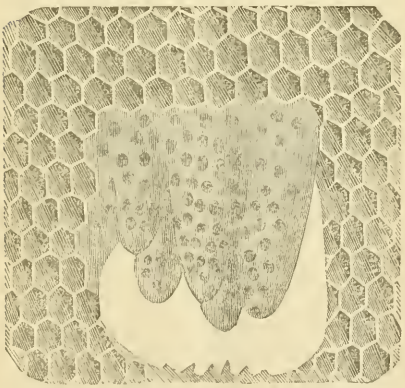
"About the time the honey flow commences, I make preparations for queen-rearing. The first thing wanted is some worker comb preferably new, evenly filled with eggs. I take one of the middle combs of the hive containing the imported queen, and fit centrally into it two pieces of worker comb taken from one-pound sections. These are about four inches square and I select those that have been drawn out about the proper depth for brood-rearing, or trim them down to that depth. The honey has all been removed, probably the previous year. A piece is cut out of the brood-comb for each section and the sections merely crowded in. I do not mean, of course, any of the wood of the sections, just the comb.

Suppose these section combs thus prepared to be put in the middle of the brood-nest on June 1; I look, on June 2, to see if eggs are to be found. Most likely; if not, almost surely June 3, about three days from the time the eggs are laid. I cut out these sections and replace them with fresh ones. Then the sections are cut up and attached to the brood-combs in the manner directed by Mr. Alley in his book on queen-rearing, *only instead of leaving an egg in every alternate cell, I leave one in every third cell.*"

The words which I have put in italics is the part of Dr. Miller's method for rearing queens to which I wish to call special attention. We judge Dr. Miller considers that he has, "by leaving an egg in every third cell," discovered something concerning queen-rearing before unknown to us. I have once given my early experiments in queen-rearing but as they may have been forgotten by some, I will give them again.

What led me to experimenting for the purpose of having queen-cells so built that they could all be transferred to nuclei or nursery cages without destroying even one cell in the operation was this: I adopted queen-rearing for a business. I knew as little about new methods, at the time, for rearing queens as most beekeepers at this age who have not read the Beekeepers' Handy Book. Of course, I pursued the old fogy plan, the same as is now practised by all queen dealers who are behind the times, and whose methods may be found in nearly all old works and treatises upon bees. Not one writer whose work I have ever read has improved upon or advanced beyond the methods given in Mr. Langstroth's work. All these old, stereotyped ways were very unsatisfactory to me, and I found it impossible to rear queens by any of them as rapidly as I could get orders, nor yet could I rear queens that were *all* first-class.

Then, again, queen cells built by the old methods were in clusters similar to those shown in the illustration.



It will be seen that the cells are all attached and firmly joined to their neighbors; and it is impossible to detach them without destroying more or less of the queens, and in order to save all, I made small hives with glass on both sides, just large enough to take one 5×5 inch comb, so that I could see the cells on either side, or a young queen the moment she emerged. I was obliged to be up about half of the night and nearly every night in the week too, during the five months queens can be reared. Sometimes, when I had a nap of an hour, I would examine a hive and find three or four queens on the comb at one time. Some of them would be stung; as you know that the first queen that emerges will attack the next one the moment she leaves the cell, and, if none are about to hatch, the queen that has possession of the combs will select those cells containing nearly matured queens, cut a hole in the cells near the base and sting the queen. Hence, the importance of sitting up nights in order to save the young queens. Well, the idea struck me that if I could devise a way to have cells so built that they could be transferred to nuclei or to cages so that all could be saved, I might carry on the queen-rearing business with half the expense of both time and money. And then I found that I must give up night work, even if I had to abandon queen-rearing. Accordingly, I put my wits to work, and my first experiments in the line of having queen-cells built so that they could be removed separately were as follows: The strip of comb containing eggs was fastened in position as described in my book, but none of the eggs were destroyed. When the bees had been at work twenty-four hours on the cells, I opened the hive and destroyed the larvæ in every alternate cell. My next experiment was to cut up the comb containing eggs into separate cells and fasten each cell to a comb in a small frame. I found the bees very unwilling to rear queens when the combs were thus prepared, and I never succeeded in rearing a queen that was worth a copper. Of course, this experiment was soon abandoned. My next experiment, and the one I now practise, proved

a decided success. I could rear such fine, large queens by this last method that I was led to try other experiments, and here is just where Dr. Miller's method comes in. I destroyed the eggs as Dr. Miller says he does, but the result was about the same as in the experiment I tested with the single worker cell; though I could get a few very good queens built by Dr. Miller's plan, but a large majority of those so reared were worthless. I have been rearing queens for over a quarter of a century and if any person can mention an experiment that has not been tested in my apiary, I should be pleased to have him do so.

Beekeepers who take an interest in their business should certainly obtain a copy of the Beekeepers' Handy Book. Any one who has not acquainted himself with our different methods for rearing queens will, when he has once read the Handy Book, be surprised that he has learned so much about queens and queen-rearing in general that can not be found in any other publication extract. Bear in mind, dear reader, that the Beekeepers' Handy Book is not a compilation of other works or of matter taken from the various bee journals. The work is the result of twenty-nine years' experience in practical beekeeping, twenty-seven of which were devoted to queen-rearing. Part 1st, containing 200 pages, is devoted to practical bee culture. Part 2nd, containing nearly 100 pages, gives my method of queen-rearing. The work contains nearly 100 fine illustrations, and will give the reader information regarding queens, how and when to rear them, what queen to use as queen mother, where to keep them to obtain eggs for cell-building; in fact, there is no point which is not thoroughly explained and in a plain, common-sense manner.

SELECTIONS FROM CORRESPONDENCE.

Otterville, Ont., Can.

MR. ALLEY: Please send me some sample copies of the AMERICAN APICULTURIST. I want to get up a club. My friends like your journal the best of any we have received.

W. S. BUCKBOLDER.

Astoria, Oregon.

I hear your queens highly spoken of by beekeepers who have tried them, and all like the APICULTURIST.

FRANK S. HARDING.

Hoytville, Mich., Oct. 22, 1886.

EDITOR AMERICAN APICULTURIST.

Bound volumes I and II of the Apiculturist at hand. The book is much better than I had expected. I like the "Api" and you may count on me as a subscriber as long as I own a colony of bees.

I first started with two colonies; I got 150 pounds honey in sections. The second year I had seven colonies, spring count, and got 575 pounds in one-pound sections. Third year thirteen colonies spring count, and got 950 pounds in one pound-sections. I now have twenty-two colonies in nice shape for winter. I use chaff-hives and winter on summer stands. Sold all my honey at ten cents per pound in home market.

WILLIAM SPALDING.

San Diego, Cal., Aug. 7, 1886.

EDITOR AM. "API";

Generally speaking, apiarists of southern California have had a busy season; in most apiaries swarming has not been heavy. In my own apiary, I had but nine natural swarms, 68 stocks to start the season, now 97 colonies, gained the increase by division.

Extracted, first run, Apr. 15.
" last " July 15.

Total 190 cases of 120 lbs. each, or 22,800 lbs. (11⅜ tons) = an average of 235½ lbs. to the stock; in addition after the *first* run, of extracted, I put 48 2-lb. section on each of (three) chosen stocks. These three made an aggregate of 435 lbs. comb honey.

Bees have been working very slowly since July 15; it is now Aug. 7, and I think it will take them two or three weeks more to fill the sections; at any rate our next will be their last run. Bees

robbed badly last extracting, no robbing up to that time. I have a copy of the first edition of the Beekeepers' Handy Book and I consider it leading in every respect.

CHAS. SANDERSON.

Coltamer, N. Y., Aug. 30, 1886.

MY FRIEND H. ALLEY:

At half-past four this P.M. a queen arrived from you unexpectedly, and a pleasant surprise it was. She is now ruling, I hope, in a colony of the ugliest bees I ever saw. I gave the old queen to Mr. S. Snow of Fayetteville, and when her bees get a start they will give him the St. Vitus dance, or I am mistaken. She was bought of friend G. W. House for $5.00 as a pure Italian, but I think he made a mistake, for I think she must be the twin wife of Satan.

I like the looks of your bees; they are indeed just splendid looking. My wife says they are the handsomest bees in my yard and beautiful. Thanks.

Fraternally yours,
J. W. LEFFT.

Bluffton, Ohio.

EDITOR AM. "API."

I am well pleased with the APICULTURIST. It contains more good common-sense articles with less advertising by contributors in the reading matter that any other journal I am acquainted with, and I take most of them.

FRANK A. EATON.

Cottage Grove, Ind.

I like your journal very much. Wish it was a weekly and as good as it is now.

P. A. BARNNARD.

Orangeville, Ca.

I take two bee papers, but think the APICULTURIST beats them all.

WM. G. ROBINSON.

We make the following extract from a private letter received from one of our most prominent beekeepers and writers on bee matters:

The APICULTURIST under your management is second to no other Journal. Every issue is full of interesting and highly practical matter. Your question department I like better than that of any other, as one is able to express something like a complete answer. Wishing you the success that you deserve, I remain, etc.

Another prominent beekeeper, and one whose writings are found in every bee publication and whose name is familiar to every beekeeper in the land, writes thus:

"I wish to commend you for the intrinsic value of the "API" since you took it. It has been solid full of valuable matter, worth many times its cost.

Sterling, Mass.

MR. ALLEY:

Last spring I sent for sample copies of the several bee papers of the United States and liked the "Api" the best of any by all odds, and subscribed.

H. P. KENDALL.

Bellefontaine, Ohio.

MR. ALLEY:

I find your drone and queen-trap is especially helpful to the minister who is likely to be preaching the gospel about the time of day, on Sunday, when his choice queen is likely to come off with her yellow-banded beauties.

REV. W. H. SINGLEY, D. D.

CONVENTION NOTICES.

The New York State, the Eastern New York and the New Jersey and Eastern Beekeepers' Associations will hold their great united convention at Albany, N. Y., on Jan. 18, 19 and 20, 1887. This convention will be one of the largest, if not the largest, ever held anywhere in this country and it behooves every beekeeper in the country to attend. A great exhibit of apiarian fixtures is promised. An unusually brilliant programme will be prepared and announced later.

The next annual meeting of the Nebraska State Beekeepers' Association will be held in Lincoln, Nebraska, on Wednesday, Jan. 12, 1887. Location of Hall to be used and Hotel accommodations will be given after further arrangements have been made.

H. N. PATTERSON, *Sec.*

"The Vermont Beekeepers' Association will hold its annual meeting in the city of Burlington, Vt., on the 13th of Jan., 1887.

R. H. HOLMES, *Sec.*

CLUB RATES.

THE BEE-HIVE, bi-monthly, and the APICULTURIST will be sent one year for $1.00

THE BEEKEEPERS' MAGAZINE, monthly, and APICULTURIST, one year, $1.00.

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., FEB. 1, 1887. No. 2.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt delivery. Workmanship unexcelled.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our best queens at any time between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

SIMMINS' ORIGINAL NON-SWARMING SYSTEM.

SAMUEL CUSHMAN.

THE above is the title of a book published in England a year ago. It has since been advertised in the "British Bee Journal" and for the last three months in a prominent American Bee Journal.

I have lately obtained the book and eagerly read it through at one sitting, meanwhile regretting that I had not secured it six months before when I first heard of it. Had I read it last winter, I should last season have followed with confidence methods which I tried with success in only an experimental way. Mr. Simmins says of the method "It is based upon purely natural principles and is the only system that can ever be relied upon, because no other conditions exist in the economy of the hive that can be applied to bring about the desired result, a total absence of any desire to swarm."

The principle is to give the bees more room than they require by always having unfinished combs in brood-chamber nearest to entrance. These combs are removed or cut out as fast as made, the worker comb fitted full size into sections, and the drone comb is melted for wax. The author admits the possibility of swarming if such unfinished combs or space are at back of hive or farthest from the entrance and insists that it always be at the front or adjoining the entrance.

Brood-frames with starters only and sections filled with newly-built combs are used to prevent swarming and get all honey in supers.

He believes that, during a honey flow, bees secrete wax constantly and, unless such space is given, there is great loss of wax by the scales falling to the bottom, there to be removed and lost.

He believes, as do many prominent apiarists in this country, that foundation is generally used in brood-chambers at a serious loss; that starters in frames are more profitable: and that if full combs are used in sections all the honey will be stored in supers; also that it pays to get all the honey in the sections and feed sugar syrup for winter stores.

The system of contraction, as followed by American apiarists, is substantially followed by Mr. Simmins.

He fastens foundation in frames in April, hangs them in the sun to bleach, and claims that it makes no difference as to the ease with which bees work it out. He tells how to improve the appearance of sections with dark and soiled cappings; this is quite a point.

In working for extracted honey his extracting combs are used in supers between dividers, similar to our sep-

arators: this leaves them even and flat, that they may be used in his uncapping machine. By the use of this machine "the beekeeper will be advancing one step farther in the economic production of the 'peoples' honey.'"

In chapter on "Queen Rearing and Increase by Nuclei" he says, speaking of the queen, "she actually lays eggs of three kinds because each is deposited in a cell which is of different construction to the other and each is destined to become a distinct being;" farther on he mentions that bees can raise a queen from worker eggs.

The author evidently reads our American bee papers and is no more in favor of reversing frames than a good many this side of the water, and under "Caution in regard to Reversible Frames" he says: after a frame is inverted a *strong colony* will make another passage along the bottom while the comb is being secured at the top and that this will happen as often as the comb is inverted. Has any one found it so? He believes in feeding dry sugar or rather damp sugar for stimulation and to have combs built and foundation drawn out as has been previously published.

The terms storyfying hives, stock-chamber and stock-combs are noticeable to American readers.

Late views are here arranged in a system and so plainly described that, while the reader gets many new ideas, he also better understands those he has been quite familiar with.

The plan of having an unfinished comb at entrance is not new to me, as it has been advised and followed to keep back or lessen the tendency to swarm but its importance to entirely prevent swarming I have not before seen advocated. Should think these combs while being built would receive much pollen which would prevent their use in sections.

There is an idea which has been given in the 'Api' pages 93 & 98 Vols. 2 & 4) and which I consider important that I expected to find in this book and which Mr. Hutchinson has not touched on in his able articles on the use of foundation starters in brood-chamber. It is that comb-building is a natural instinct which must be gratified, its gratification rouses or stimulates all the energies of the bees and queen, resulting in a more industrious and profitable colony.

It is also said by a high authority that bees can produce wax more readily from raw nectar or new honey than from ripened honey, and from cane sugar than from grape sugar or glucose. That it takes more of one than the other to produce a given amount of wax.

This may throw some light on the failure to produce comb honey economically when feeding back that which has been extracted, there has always been too much loss in weight to make it profitable. Had all sections been filled with drawn out combs or foundation previously drawn out with sugar syrup (the syrup having been extracted) and if the rearing of brood was prevented, feeding back thin new honey in warm weather might be made a success. I should, however, prefer to let the bees store it there in the first place rather than to extract and handle it over.

We may find that it does not take even fifteen pounds of new honey to produce a pound of wax under right conditions.

The idea of feeding sugar syrup to *build combs* for future use and for the cheap production of wax had been suggested to me by past reading ("Api", 1884, Vol. 2, page 19). Had thought of having foundation in sections built out in this way before the honey season. Had asked questions in the "Api" (Vol. 3, 1885, page 227) to draw out opinion on the plan, but answers were so discouraging that I partly lost confidence. I did not en-

tirely give up the idea although I did not then try it. Had read of Simmins' dry sugar feeding ("Api" '84, Vol. 2, page 266) for continuous stimulation; thought it would be but little trouble and effective, and last spring I followed it with satisfaction.

I filled wide-frame dummies with damp sugar, an opening in the side at top (Simmins' plan) allowed the bees access: this was hung next to brood-combs. I used the 2-inch wide frames while he recommends 1½ inch; the result was long sheets of fine white, drone comb were built inside the dummies, brood-rearing was stimulated and sugar lasted so that even weekly attention was unnecessary. This was before the honey harvest. These combs were brittle and the wax when chewed was dry, crumbly and tasteless and less fatty than that from new honey.

This might be remedied by the addition of a certain proportion of granulated honey. I tried granulated honey clear but it was not taken us well. Those who think feeding daily a small quantity of syrup for stimulation too much trouble to pay should try this method.

Pawtucket, R. I.

For the American Apiculturist.

THE WINTERING NUMBER OF APICULTURIST.

C. C. MILLER.

THE editor deserves a hearty vote of thanks for massing in the October number of the APICULTURIST, so much valuable information on the subject of wintering. The reading of it was of intense interest to me and I doubt not to many others. It may be interesting and possibly useful to summarize under appropriate heads the views of the different writers and comment somewhat thereon. But first will the editor allow me to pick a good-natured quarrel with him over his remarks on page 237? This sentence occurs: "What they say is not mere theory, and any novice or old beekeeper can safely adopt and put into practice, any of the methods herein given for wintering bees." And again: "If any reader of the 'Api' loses his bees in wintering after this, it must be from carelessness or because he did not carefully read this number of the "Apiculturist." Now, Mr. Editor, I do not dispute your statement that the essays are not mere theory. I consider them valuable and undoubtedly based upon the experience of the writers, but I believe the wintering problem not yet entirely solved, and circumstances and local surroundings change matters so much, that what may be right for one may be wrong for another. I venture the guess that if you select the most successful man of the whole eleven writers and let him for ten successive years winter his bees alternately at the location of the other ten writers, not changing his plan of wintering in any respect, he will increase his percentage of losses. Or, if you select any of the eleven, and give him 100 colonies, obliging him to follow strictly the instructions of the other ten writers with ten colonies for each, I suspect several of the 100 will succumb.

Moreover if a novice were to attempt to follow the directions given, he would be somewhat confused on several points, where such diverse instructions are given. I will give you but one illustration. Dr. Tinker says: "I am prepared to say from ample experience that every kind of upward ventilation through free openings or loose porous coverings is pernicious and liable to disaster," and speaks of the "thousands of thousands of colonies lost in wintering, largely through the follies of upward

ventilation." Mr. Dayton says " . . . . . it is reasonable to suppose that the reports of wintering without some kind of upward hive ventilation were mistakes. Out of a hundred or more colonies prepared without upward hive ventilation, I have been unable to get one decently through the winter, while whole apiaries having upward ventilation wintered perfectly without any loss." Now what is the poor novice to do? Death and disaster threaten him *with* upward ventilation, and disaster and death *without*. But after all this is said (and I have merely said it to show that the solution of the problem is not yet complete for universal use) I still think the October APICULTURIST a valuable contribution and a help toward the desired solution.

And now, not with any critical spirit, I will collate some of the different views and practices. Of the eleven writers, five appear to winter out-doors, four in cellar and two in both ways. Mr. Demaree lives in Kentucky where cellar wintering is unnecessary, leaving the other ten equally divided as to out or in-door wintering.

As to temperature, one recommends 41° to February, then 48° from that time till the bees are set out, one says 43° to 45°, two say 45°, one says 45° or more, and one says 50° to 55°. This certainly shows no very wide divergence of views and I think we are slowly getting at what temperature is best. In my own practice, I am satisfied if I can keep my cellars from 45° to 46° and perhaps 50° may be none too high for the latter part of their confinement.

As to size of brood-nest, one contracts in proportion to the size of colony; one to seven frames, and in September to six or eight, and one, September 1, to five or seven. This makes me think it possible I contract too much, as a great many of my colonies have only four or five frames. Still the tendency has been toward a smaller brood-nest and that tendency may continue.

As to food, one makes no choice between sugar-syrup and honey; one thinks sugar-syrup safer one year with another than honey; and three prefer *good* honey, one of these emphasizing that the honey should be stored early and thoroughly ripened.

Regarding pollen, one thinks the pollen theory most fallacious; another thinks we may cease to call it a theory and accept it as a settled fact; four pay no attention to the matter of pollen; another would rather have the pollen out, and another thinks pollen harmful in some localities and not in others. So we are all at sea as to pollen, but possibly the last opinion given may harmonize all the others.

As to ventilation, we are left pretty much at sea also. Two directly opposite views have already been given; burlap, carpet, leaves, shavings and chaff are used as packing by different ones, special mention being made by two, of an empty space in the cover over the packing with a $1\frac{1}{2}$ or $1\frac{3}{4}$ inch hole in each end of the cover so the wind can blow right through. Mr. Muth objects decidedly to the use of oil cloth over the brood-nest, and yet I have used it many times with good success. In my own practice I have never used porous coverings in winter. For years I left an open space at the back end of the top of the hive; then I tried both ways at the same time, having some ventilated and others sealed tight, and I could see no difference, so now as a matter of convenience I leave on the cloths or quilts as they were on summer stands.

I think only two speak of the age of bees for wintering. Mr. Pond says: "Brood-rearing I keep up by stimulative feeding as late as the bees can care for brood; desiring they should go into winter quarters with a full quota of young bees." On the other hand Mr. Manum aims "to

have all brood hatched by Oct. 1st," and says "I prefer bees for successful wintering that hatched in August to those hatched in October. Could I have my own way, I would not attempt to winter a single bee hatched after Sept. 1st."

I suspect that even the most experienced will be interested to read more than once this fine collection of essays.

Marengo, Ill.

For the American Apiculturist.

LOW PRICES AND THE CAUSE.

J. W. PORTER.

FROM every market comes the report of lower prices for honey than were ever known before.

Nor is this report confined to our special product.

All of the great staples, productions of industry, share in the general decline till prices are for many of these so low as to fail to cover the actual cost of production. Take wheat and corn, for instance. Last July a carload of corn, 550 bushels, was sold in Chicago which netted the shipper, a Nebraska farmer, $28.50, say five cents per bushel!

Whatever prices may be exacted of the consumer by rapacious middle men, and through the combinations of speculators in farm products, the fact remains, that never before were our farmers receiving so small a reward for their industry, and vast numbers of them are running behind actual expenses.

Favored as we are by a vast home demand, due alone to the expansion of our manufacturing and mining industries fostered by a protective tariff, we, much as we suffer, have greatly the advantage over British and European farmers. The decline in prosperity is world-wide and has engaged the attention of many publicists, and volumes have been written on the subject, but no relief comes. Some adequate cause exists for such a strange condition of affairs.

This ought to be the most glorious epoch in the history of the world and one of unbounded prosperity. Peace reigns everywhere. We have plenty of all that conduces to public or private welfare of material things. Freedom from pestilence and actual famine unknown upon the earth. We have control of such forces of nature and have applied them to labor-saving production, till our wealth-creating power is multiplied beyond even the dreams of the most ardent, living a half-century ago.

With avenues of employments opened up for millions, in channels new, many of them, to men of our own day; with ages of experiences to guide us into wise and safe fiscal management; we, in America at least, have a sound banking system and a good currency.

Why then, this anxiety and doubt, that everywhere (except among the army of beneficiaries which such a condition of affairs directly benefits) prevails instead of buoyant prosperity.

The cause—a sufficient one as can be shown—lies in the unholy war upon silver. Its demonetization, by England alone more than a half-century ago, was not felt; but when Germany and America in 1873 by law adopted the sole gold standard, and Germany to strike again her fallen foe, after demanding her $1,000,000,000 in gold indemnity, America by some unknown hand incorporating the act into the revised statutes of our country. Unknown even to our President, unknown to our people, was this great country committed to the policy of England. The French, with the financial foresight ever characteristic of that great

people, promptly closed their mints to silver, and the allied brethren of the "Latin Union" acted with them. There being then no market for silver it became the foot ball of speculators and brokers. America then, under the *paper régime*, had no use for it. When we were preparing for resumption, it was discovered. President Grant, in 1875, resumed the establishment of more units to coin silver and then found there was no law for such coinage. A monetary commission was called in 1876 and their report has been called the most complete compendium of monetary science ever published.

Congress passed a law providing for the free coinage of silver. Wall street and the money bags protested, and President Hayes vetoed the act.

A compromise bill was then passed providing for the limited coinage of silver dollars, and our standard dollars, making them a legal tender for all debts.

This *fails as a remedy* while it gives us more specie. It fails because it does not restore silver bullion to a like equality with gold bullion in its relations to coin.

Free coinage, *an open mint* giving standard coin for its legal complement of bullion, can alone give us a remedy.

When the mines of California and Australia poured their wonderful volume of gold into the world's coffers in the decade beginning in 1850, gold did not decline because the Bank of England was bound by law to buy all gold offered at its coin value 3£ 17s. 9d. per ounce. Its production was vastly greater than silver.

Have we a redundant production of silver now? The production of all the world's mines was placed at $115,000,000 for 1885 and of gold $95,000,000. Our own country produces more of each than any other country. Of this $115,000,000 of silver, a vast amount variously estimated at from 25,000,000 to $40,000,000 is used in the art and for plate and ornaments. $25,000,000 were imported in 1885 into India alone, where silver is the only money of its vast population.

This paper, already too long, cannot cover the ground. We wish to show that a base conspiracy against the interests of the people is giving to the money monarchs, who hold the evidences of the vast debts of nations, made payable in gold coin, principal and interest, a grasp upon the industries of the world, worse than that of the devil fish. The Rothschilds and allied bankers in Europe now control the nations there, for they hold the purse strings.

In another paper we will show, if permitted, that the law of supply and demand in no way regulates the price of silver bullion. Also, how we, the greatest producers of silver, send it abroad, to enable the British importers of wheat to pay for Indian wheat in cheap silver and cut us out of our market for that great product of American fame.

Charlottesville, Va.

For the American Apiculturist.

"WHAT IS IT?"

WILLIAM M. KELLOGG.

READING the items on the above topic in the November Api, I was led to think of a twin question, "Why is it?" The Editor, as well as L. N. S., thinks there will be great mortality among the bees the coming winter on account of the large amount of honey dew stored. I will agree with them also, from a sad experience on my own account, where our bees wintered on honey dew stores. I had three stocks left of mine; another with 153 in the fall had three in the spring, and a like ratio all around us, while a few miles south of us where they had no honey dew, bees came

through finely. Now for my "Why is it." When the beekeeper knows so simple a remedy as this case takes, and the likelihood of honey dew coming any season, why is it that they will persist in letting their bees have it for winter stores? Now we had a great flow of honey dew here this season in the latter part of August, and first part of September, but our bees have none of it to winter on and we are not looking ahead with apprehension as to their wintering. Nor did we extract it either to feed back sugar syrup. Honey dew always comes after white clover, and the stocks that have no room below to store anything, of a necessity can't have honey dew for winter use. On the white clover flow our brood-chambers are full, either of brood or honey, usually a great abundance, and having on plenty of surplus room, if honey dew comes, it is stored above where the beekeeper can easily remove it. Our June filled combs of clover (and basswood sometimes) remain there all summer and is the winter food, so we do not fear honey dew. I find there are quite a variety of tastes as to honey. A few are very particular, must have clear quill white clover honey, but a large majority make no comments, if the honey is good and thick. To test this I recently tried an experiment. At the last of the white clover run, as usual, we had some partly filled sections, and these were filled at the bottom with honey-dew, an average of one-fourth being of the latter. It is in very strong contrast to the white clover above. A man close by, wanting a crate, I took him one filled with this clover-honey dew, half expecting him to "kick" and bring it back, for I guarantee all my honey. Time passed, and after a while I asked how they liked the honey, "first rate, that's splendid honey, it just takes a section to a meal with my family." I thought "where ignorance is bliss 'tis folly to be wise."

Mr. L. Spencer must surely have something else that the bees get pollen from in clover time, for pollen here at that time is a very light cream color.

Oneida, Ill.

For the American Apiculturist.

REPORT OF ONE COLONY OF BEES.

O. F. WINTER.

I have kept a record of a colony of bees for five years. It runs as follows: No. 52, 1882, 118 lbs; 1883, 96 lbs.; 1884, 145 lbs.; 1885, 94 lbs.; 1886, 144 lbs., making an average of 119 lbs. per year during the five years. There have been fed to this colony 20 lbs. for winter stores; this would make the average surplus 115 lbs. per year.

This is not considered a first-class location for bees as there are but few basswood trees in this vicinity.

REPORT FOR THE YEAR 1886.

Fifty colonies in the spring, average strong and good; increase ten stocks; honey, 2,500 lbs.; average per colony 50 lbs. From the fifty colonies I had but three first or prime swarms.

I should have said that colony No. 52 were hybrids, also that they had not swarmed during the five years.

Winterton, N. Y.

For the American Apiculturist.

APICULTURE IN CALIFORNIA.

A. NORTON.

HIVES.

THE subject of hives is not the safest nor the easiest to handle. The large number of unlike styles that are advocated and successfully used by eminent beekeepers make it impossi-

ble for the thoughtful to enter a discussion with ultra views or prejudiced mind. In judging what little I may say on this point, please apply the standard of differences in climate and established methods here, the one so mild, the other so nearly approaching the "wholesale" as to make California bee culture characteristic. The man who has twenty-five to fifty colonies to handle will look at facility, convenience, etc., from a different standpoint than does the man who has two hundred. And those in California who number their colonies from four hundred up, with the least amount of hired help, practicably are more particular about ease and rapidity in the working of hives than if they had only one-half or one-fourth that number.

I have given the subject of hives a great deal of thought. I have studied the construction of a great many kinds, though I have had practical experience with but few of them. Many an anxious hour have I spent devising some style that would correct this bad feature and do away with that; and several are the new forms I have gotten up, but the only result I take any pride in is that I had sufficient sense to discard them all without trying to induce others to use them. As a general thing in this country the preference is steadfast for the original Langstroth with the metal improvements. Whether this is on account of progress coming to a standstill, or the result of practical experience that amounts to almost a demonstration, I will not presume to say. My inclination, however, to concur in this preference is left more decided after each attempt at a departure. In working for extracted honey the need of ease in manipulation is specially felt. Among the primary considerations needful in a hive are: that it may be opened quickly and with little jar; the frames taken out and the bees brushed and shaken into the hive with despatch; if a set of empty combs be not at hand, that the hive may be left perfectly closed; and then that the frames may be rapidly returned three or four in hand at a time and quickly spaced without crushing bees in undue quantities. A secondary, yet very important consideration, is simplicity and cheapness of construction. It seems to me that the Langstroth principle of hanging frames comes as closely or more closely to this standard of convenience than does any other. So long as I have deemed it practicable to remove frames from the end of the hive, I have looked for some style of standing frame. A frame that could be removed from the brood-chamber without need of changing the surplus department would save much crushing of bees so often unavoidable in removing and replacing the super. But this frame, even if devised, would sacrifice one point in the standard,—quickness of handling, for frames cannot be as naturally and speedily removed from side or end as from the top. There is, moreover, no hive on the market with standing frames that can be taken out without removing the super or at least tipping it up so that bees can get under and be killed in replacement. Last spring I constructed a hive with Adair-Langstroth frames that could either stand reversed or hang in a natural position, and in the former case could be removed from the brood-chamber without touching the surplus, by taking them out at the end. Though I could remove any frame first that I desired, still after a two months' trial I cast it aside; reason—inconvenience. With the closed-end standing-frame my experience is very slight, and that little is with the Bingham. I have none with the Quinby, except modifications of my own construction to do away with the closed-end bar. I would not attack those forms in any unfriendly spirit, nor can I claim that my views regarding them are conclusive. But,

so far as my own use is concerned and the experience of the most extensive and skilled apiarists of my acquaintance goes, they embody a disadvantage in addition to the ordinary inconvenience of handling.

To be removed, the frames must be pried apart. In a full colony the bees crowd out at every opening, and they will cover the edges of the frames. When the frames are again brought together, the operator must either kill bees or use a degree of care that still further retards his progress. That able apiarist and accomplished writer, Mr. P. H. Elwood, writing for January "Api," 1885, claims for the closed-end Quinby that "Capt. Hetherington, probably the largest producer of comb honey in the world," uses it, and that "Chas. Dadant, the largest producer of extracted honey in the west, uses the same."

I believe that the most extensive producer of comb honey in America—possibly in the world—is or has been Mr. J. S. Harbison of San Diego, than whom no more skilful or experienced beekeeper can well be found. This gentleman has numbered his colonies higher than 2,000, and his product of comb honey in a year has reached 100 tons. In 1880 he shipped ten car-loads of comb honey to the eastern market. Mr. Harbison uses an admirable hive of his own, a hive that is wholly unlike either the Langstroth or the Quinby in principle. The frames are supported at the upper front corner, steadied and partially supported at both lower corners and removed at the back or end. The end bars are of the same width as in the Langstroth. The lower corners do not touch the bottom of the hive. Mr. H. has always found this style satisfactory and has not, to my knowledge, ever discarded it.

The hive was some time in general use in San Diego County and among comb honey producers in this (Monterey) county. It is of late giving way to some extent to the Langstroth.

Gonzales, Cal.

(*To be continued.*)

Reported for the American Apiculturist.

SEVENTH ANNUAL MEETING OF THE ONTARIO BEE-KEEPERS' ASSOCIATION.

R. F. HOLTERMAN.

At the meeting of the above association at Toronto, Jan. 5 and 6, 1887, there was an attendance of from sixty to seventy members. Three of the commissioners in connection with the exhibition of honey of the O. B. A. at the Colonial were present: Messrs. S. T. Pettit, S. Corneil and R. McKnight. The show of honey at Kensington has been the largest ever held in the world. The ingenuity manifested in popularizing Canadian honey while there reflects great credit on our commissioners. Tons of honey were given away in spoonsful to visitors, and many thousands more in four ounce, eight ounce and one pound packages, so that a safe estimate would be to say that this delicious sweet had reached half a million to a million people. And not only had it reached the laboring class, the middle class and the upper class, but it has also reached such tables as those of our queen, the Prince of Wales and such as it is well known are difficult to reach in these matters.

The referees, after deducting the expenses of commissioners, over and above the $1,000 granted by the Canadian government and the expenses of distributing samples free, still left a high wholesale price for Canada. But while this is the case, Ontario beekeepers must re-

member that their facilities for disposing of honey and many exceptional expenses, such as freight to England and commission on sales, will have to be shouldered by the beekeeper. Also the honey was largely disposed of in very small packages and relatively high prices; the opportunities for such sales will be very much diminished, and in the future instead of netting about 10 cts. for extracted honey per lb., 7½ cts. to 8 cts. or possibly even only 7 cts. need be expected. I was confirmed in this opinion by conversation with some who were in a position to know. This price is very satisfactory and if Canada can secure at her doors 7 cts. wholesale for her honey, apiculture is bound to flourish and advance.

The evening of the first day was set aside in honor of the commissioners and was spent very pleasantly and profitably in listening to an account from the directors of the visit to England and their work in connection with the exhibit.

Mr. S. T. Pettit, the president of the association, stated, they were in a position, if matters were managed properly, to secure an opening for all the honey they could produce in Canada; in order to retain and enlarge the demand which had been produced honey must be obtainable constantly and in large quantities and its production must be largely increased in Canada. He strongly dwelt upon the necessity of having it only of the very best. The brightness and clearness of their best honey was a trade mark no one could imitate, therefore no dark should be sent as the brightness would no longer stand out as our distinct trade mark and it would open the doors to all grades being pawned off as Canadian. We should be sure to have only honey ripened by the bees sent and in order to secure ample room for storage and such ripening the tiering-up system should be adopted. No one argued that artificially ripened honey was better than that ripened by the bees naturally; many strongly argued to the contrary. He knew artificially ripened was much inferior, therefore condemned beekeepers attempting such work for the bees. If the beekeepers worked together harmoniously, and took the greatest pains to send the best honey to the British market, by degrees Ontario honey would find its way into that country and into Germany and the beekeepers of Ontario would find a ready market for all the honey they could produce.

Mr. Corneil related how they had not reached the Colonial until towards its close. It took them some time to work to advantage, and if they had been there from the commencement no doubt they could in that one building have sold all the honey produced in Ontario the past season. The honey had been sent in too large packages, both comb and extracted, and it had injured both sales and display, a section crate holding 6 to 12 sections was ample but those holding 18 to 14 had been sent. As much of the comb as possible should also be displayed; it helped the sale.

Mr. McKnight gave an amusing yet instructive account of the Colonial. Only 12 sections of honey had been broken in transit; their display of honey had done more to give the English people a correct idea of Ontario climate than all the past labors of Canada in the past. Her apples, cheese and honey had created a tremendous sensation: the two former stood foremost in the market and he had no doubt before long honey would.

All were highly pleased with the work and the way in which it had been carried out by the commissioners. It only requires now careful management to carry on all good work and permanently open out a market for Canadian honey.

Brantford, Ont.

For the American Apiculturist.

PRODUCING COMB HONEY.

C. W. DAYTON.

In the early days of my beekeeping, I learned that a colony of bees would yield more of extracted than of comb honey. The reason for it was uncertain. Some said it was because of the time spent in building the comb and of the honey consumed. While this was true on certain occasions it has been found through practice to be largely idle conjecture.

There are many now who claim to get as many pounds of comb honey per colony as of extracted, yet those apiarists have not told us exactly how it is done, or in what part of the management the failing ones erred.

To better satisfy myself on this point, I set apart twelve colonies of equal strength for the purpose of experiment. Six of the colonies were run for extracted honey and six for comb honey in one-pound sections.

The comb honey arrangement used was the Heddon style without the honey-boards and arranged so that the bottom of the sections were a bee space or three-sixteenths inch from the brood-frames. The extracted arrangement was an upper-story containing eight frames, the same number contained by all of the brood-chambers. When the extracting stories were adjusted and two or three frames of brood from the brood-nest were placed in the upper story to cause its immediate occupancy by the bees, the sections were filled full of foundation and were used without separators.

It was soon ascertained that the dry sections of foundation possessed no special enticement to the bees, so the only alternative was adopted, which was to keep the queen cells cut out until the colony became so populous that the bees occupied the sections for clustering space. During this process of forcing the bees into the surplus receptacles, I found that the extracting colonies had immediately followed the brood into the upper-stories, drawn out the foundation and filled the whole story with honey nearly ready for the extractor so that I obtained one extraction of about thirty or forty pounds by the time the other colonies had gotten well at work on the foundation in the sections. From this time on, I could see but little difference in the amount of comb or extracted honey stored, and at the end of the harvest I took an average of sixty-two pounds of comb honey and 106 pounds of extracted per colony, the difference not far exceeding the amount lost by the bees failing to begin work in the sections at the time of their adjustment. I have repeatedly made experiments of putting on upper-stories of empty combs and they nearly always fell behind those where some brood was placed above to entice the bees.

When our fixtures are so arranged that the bees enter the sections in the full capacity of the colony at the earliest season, then we shall be able to obtain nearly, if not quite as much comb honey per colony as of extracted.

How those most successful comb honey producers get the bees into the sections I do not know, unless it is by using sections of comb and honey from the year before, or, as Mr. Doolittle does, fill a few of the sections with brood.

One thing I do know is that having a quantity of bees loitering about the brood-chamber, dreaming of swarming until they are crowded into the sections, is one place where we lose.

In a future article I will tell how I manage at present.

Bradford, Ohio.

For the American Apiculturist.

WINTERING.

MRS. H. HILLS.

In describing, on page 150, Vol. IV, the manner in which my bees have always been packed for winter, both in cellar and on summer-stands, I should have added, that after the two inches in thickness of chaff division-boards are placed clear around the insides of the hives, both at sides and ends, the Hill device is placed over the frames, upper story put on, and a cotton sheet, a blanket, and chaff cushion, are packed snugly over the bees.

The first winter,—the disastrous one of 1884–5,—all combs were spread, and winter passages were cut in them. The second winter, these passages were omitted in half the hives, with no difference in results. This season, no winter passages have been cut, and only half the colonies have the combs

spread. Also, this season, a few colonies have oil-cloths, not quite full size, placed loosely above the cotton sheet, under the blanket and cushion. All colonies but three have hives full of best sealed white clover honey. Those three have mostly old sugar stores, taken from the brood-chamber last spring, and kept,—through the summer,— in extracting supers, above the bees.

One hive was so overflowing with bees, that chaff division-boards could not be placed at sides. Another, which, on being examined for winter, was found to weigh about seventy pounds, was not interfered with at all, but was allowed the full-size brood-chamber of the 10-frame L. Hive, with no packing except in upper story. Shall notice, carefully, how the last-mentioned winters and "springs." It is in the cellar, as are all the colonies except four. These latter have the additional goods-boxes, mentioned on page 150, Vol. IV.

Having always, before, wintered on sugar stores, and without the loss of a single colony, I shall watch results with considerable anxiety. The bees are, certainly, unusually quiet, thus far; but all neighboring beekeepers mention this same condition, as regards their bees. Temperature of cellar ranges from 38° to 45°, most of the time.

Ventilation is secured through the chimney, which extends to the cellar floor, and has openings which may be regulated at will. Two coal stoves keep the rooms, directly over the bees, warm, both night and day. Entrances of colonies in cellar are not contracted; and covers are raised half an inch, by inserting strips of board. On summer stands, entrances are contracted to one-third, and covers put on as tightly as convenient, though more or less straw from the packing always gets under the edges. Hives in cellar are placed on benches, a foot or more from floor and walls.

REPORT FOR 1886.

Began the season with sixteen full colonies, and eight three-frame nuclei, two of the latter being rather weak. Sold one colony to "neighbor Mattie," of whom, more hereafter. Took off just about 2300 pounds, one-third being comb honey, in three-fourth pound sections, leaving abundance of winter stores on the hives. Increased to forty, and united up to thirty-one.

Sold all the comb honey at fifteen cents; extracted, at from ten to fifteen, according to size and style of package; mostly taken at our six home groceries, and before cold weather.

Sheboygan Falls, Wis.

[How many of our old and experienced bee-keepers have made bee-keeping more of a success than has Mrs. Hills? This lady seems to make the wintering of bees as well as the sale of honey a success. Why cannot others do as well?—ED.]

QUERIES

and Answers by Practical Beekeepers.

IS COMB HONEY INJURED BY FREEZING? REMOVING PROPOLIS FROM SECTIONS; COMB IN UNFINISHED SECTIONS; POLLEN IN SECTION HONEY, ETC.

Query No. 5. 1. Have you ever had any of your comb honey frozen? At what temperature will it freeze and what are the results? Will it crack and run? Do you think that exposing comb honey in a glass case on the sidewalk in midwinter will injure the honey and hurt the reputation of the producer, if some of it is not sold till spring?

2. Are you very particular to scrape all the propolis from frames before using them again, say a wide frame of sections with empty combs. Would you again use a number of them without disturbing them or scraping the boxes?

3. Do you again use good clean empty combs in sections when unfinished ones have been extracted? I do.

4. Did you have more pollen in sections last season (1886) than usual? Are you not troubled in this way much more with side storage, also in top boxes when brood-nest is much contracted? S. C.

ANSWERS BY J. H. MARTIN.

1. I have never had much experience with frozen comb honey. I know that when honey is left in my bee house through several days of severe cold, it will sometimes show the effects in the shape of small cracks. I think, however, that a sudden jar may have caused it. I should prefer not to expose honey in a glass case on the sidewalk. I think an exhibit that will attract much attention can be made in a window where there will be no danger from frost.

2. For extracting I do not scrape propolis and bits of wax from the frames for they will be built on again and they might as well remain as to

have the bees waste time in replacing.

For box honey I would not scrape unless it interfered with putting the sections in the clamp or wide frames. I see no necessity of scraping if they are already fitted in the clamp.

3. I use sections that have white comb and which has been extracted; and prefer a clamp full of such combs above any other way of preparing the sections.

4. Have not been troubled with pollen; haven't found a cell of it in my comb honey as I do not practise side storage and therefore cannot answer this part of the question. Should I practise side storage without perforated metal I should expect pollen, brood and many other vexations.

Hartford, N. Y.

ANSWERS BY IRA BARBER.

1. In answering query No. 5 will say that I have had honey freeze and know that it will injure it. It causes the comb to crack in every direction, and the marks are plainly seen by the wet appearance of the capping. Comb honey should not be kept in a temperature below 50°, for it will crack long before the temperature reaches the freezing point.

I would much rather prefer to have one case of my honey exposed to cold on the sidewalk for an exhibit, than to have all kept in some dark corner of a commission house where no one could see it or know that honey was for sale there.

2. I do not use frames for sections, but use a rack that holds thirty-three one-pound sections. All sections not finished the first season, when they are used should be cleaned of bee-glue, and when sections of comb honey are used, the ends of the cells should be shaved off before they are put on the hive, which leaves the comb as white and clean as new, and such combs are sooner accepted by the bees, as they will at once commence to repair the cells of the rough work that the knife made in shaving them. A thin, sharp knife should be used for this work.

I am seldom troubled with pollen in sections, for I do not contract the brood-nest; as a rule can get all the honey in sections the bees do not require for winter without being put to that trouble.

Dekalb Junction, N. Y.

ANSWERS BY A. E. MANUM.

1. Yes. I have had comb honey freeze in my honey room only, but have never noticed at what temperature it would freeze. I have never noticed any bad results from its freezing, except that it cracked the comb, so that when it thawed the honey would ooze out, but I never could perceive that the quality of the honey was injured by freezing. I would prefer, however, to have my honey all sold before spring.

2. Yes. I am always very particular to scrape all propolis from frames that are laid away for winter before using them again in the spring. It is much pleasanter to handle clean frames than those that are all covered with propolis.

3. Yes. All sections containing nice, white, empty comb I use again; such are of great advantage to the bees if given during a bountiful flow of honey. I would not place them on the hives when honey is coming in slowly.

4. No, not that I noticed. I am never troubled with pollen in sections. I believe that trouble comes largely from mismanagement.

Yes. Bees are more apt to store pollen in side sections than those placed on top of the frames.

Bristol, Vt.

ANSWERS BY P. R. RUSSELL.

1. Comb honey is very much injured in its appearance by freezing. At just what temperature it will freeze I can not state. But I think it safe to say that comb honey should never be left exposed many days in a room cold enough to freeze water. Last winter I had quite a number of cases of unfinished sections stored away in a cold room, and in the spring when I came to examine them, I found them in a bad state; the cappings were more or less cracked and had a bluish cast, as of mould, while the honey in them was entirely solid or candied. Several of these sections were sold to parties during the winter, and in nearly every case complaint was made that it was not honey at all, and there was a suspicion that I had fed the bees with some vile mixture. Honey gathered in this locality is quite sure to granulate, and I have had cans of extracted honey perfectly solid as early as October, and last year all my comb honey was solid before mid-winter. In the spring I cut it all out of the sections and dumped it into a tin boiler

and melted it on the stove in a hot water bath. The wax rose at the top and I drew the clear honey from a faucet near the bottom. This same honey has been sold and no fault expressed with it; some even praising it highly. This granulating business, I think, is an unfortunate feature all around. It certainly detracts from the appearance and sale of our commodity and creates suspicion with the masses as to its true character, and this objection, in my opinion, will never be overcome.

It is better to extract unfinished sections in autumn (if it can be done without breaking out the combs) and these will be all right for refilling. Comb honey may be safely exposed for sale upon the sidewalk in winter—as much so at least, as fruit and vegetables.

2. I generally overhaul and rearrange my sections before placing them upon the hive the second time, and scrape off the most of the propolis, although this is not at all important. If sections are very badly soiled I break them up for firewood.

3. By all means I would reënlist all clean, empty combs in sections for a second term on the hive. The bees will finish these much sooner than when filled with foundation.

4. The past season I did not work for comb honey and of course did not get any pollen in the sections. I have noticed that my bees are very prone to put pollen in sections when placed at the sides of brood-nest, but have never seen any in top storing. Side storing with me is useless and I have entirely abandoned it.

Lynn, Mass.

THE ALBINO BEES. ARE THEIR PECULIARITIES PRESERVED, AND IS THE HEALTH OF THE APIARY ENDANGERED, BY IN-BREEDING?

Query No. 6. Mr. D. A. Pike, the originator of the Albino bees, says he first saw these bees in a colony of pure Italians in his apiary. He continued to breed (in-breed of course) from that particular colony, and the beautiful Albino bee was the result. Considering these facts, do you think the peculiarities and other characteristics of the Albino bee could be preserved except by in-breeding?

From Mr. Pike's apiary the Albino bees were scattered all over the United States. We will suppose that those who purchased them kept them pure Now, should Mr. Pike procure a queen from some one who purchased bees of him several years ago and cross his present stock by using the drones from such a queen, would this not be a continuation of in-breeding?

There is another point that comes in here: Is there really any danger of injuring the health of the apiary (say an apiary of 50 or more colonies) by in-breeding? Or, in other words, to what extent can in-breeding be practised without detriment to the apiary? In order to avoid any possible danger from such a cause is it not good policy to infuse fresh blood into the apiary by introducing a few strange queens, each year?

If frequent importation of Italian queens is made for the purpose of crossing our strain of American Italians, will not the results and benefits from such propagation be as advantageous as by hybridizing the different races?

ANSWERS BY PROF. A. J. COOK.

I had supposed that the Albino bees arose from careful selection and breeding of peculiarly marked Italians. Whether the bees would lose their peculiarities without great care in breeding is a problem. They have not been bred very long and so we should not expect their characteristics so thoroughly fixed that they would be permanent unless unusual care was taken in breeding.

As to whether they are enfeebled by close in-breeding is also a question which could not be positively answered. In-breeding has made all our fine breeds of stock but it is done with great care. I should fear more from the fact that Albinos have been selected with coloration, not general excellence, in view. If this be a fact, then the Albino variety has not been created on the plan which may be expected to give the best results. As in most cases, the eating must test the pudding. What do practical beekeepers say? I procured Albinos only once. They were very handsome and the most amiable bees I ever had in our apiary: but for real work they were the poorest bees we ever had. Though I had four or five queens the experiment was not sufficiently extended to prove that all Albinos are of like peculiarities; but so far as I have seen them they have excelled in beauty and temper but have failed decidedly in business characteristics. I do not believe that

Mr. Pike runs any risk in buying breeding stock from bees sold by him some years ago. I should prefer to infuse new blood were I sure it was as good blood as I had in my own apiary; otherwise I should prefer to breed from my own stock.

Unless Italian bees from Italy are superior to our own — and why should they be?— we gain nothing by importing. If ours are better than imported stock, we lose. I believe we have as good here. If not it speaks ill for our breeders.

Italians have certain distinctive peculiarities, which may be varied by interbreeding different strains, under the careful eye of the breeder. By crossing different races we can work to fix the good features of all the races and *eliminate* the undesirable characteristics, and not those simply of one race. Therefore I say no.

Agricultural College, Mich.

ANSWERS BY C. W. DAYTON.

I think they could be preserved only by in-breeding.

It would be nearly as much of in-breeding as if they had remained in Mr. Pike's apiary; but in time might have possessed peculiarities and characteristics of one or more distinct strains or varieties.

I have noticed some of the characteristic markings on bees that were far from being pure Italians.

Albinos are a particular strain of Italians, probably not so good as many of the strains of bees of the 1001 braggadocios. It is Tom's Jersey, Dick's Jersey and *my* Jersey cow. We crossed them, sent them across and became cross ourselves and in the end had nothing more than a Jersey. Where we had improved our stock there was less Jersey but more beef.

In breeding Albino bees we have to follow one certain line so thoroughly that there is little chance to reach out for valuable characteristics possessed by other varieties and strains of bees. Therefore, ten or fifteen years more ought to render them nearly worthless. Unless they are crossed with some other variety of bees it might take a shorter time. In-breeding is not always deteriorating unless accompanied by improper selection, and the selection of stock for honey gathering should not and cannot depend upon colors as "it is not always gold that glitters."

The fact that there are several who claim to be originators of Albino bees well sustains the idea of their "sportiveness."

As to Albinos being the gentlest and best honey gatherers, I can say quite positively that I get the most honey, and the most stings out of the same hive.

3. I think that with proper selection of breeding stock in an apiary of fifty colonies would not deteriorate in the space of one man's beekeeping; and with well-managed apiaries within a few miles of each other, we might do well without infusing new stock. We should infuse strange stock in order to keep abreast with the most improved strains as the bees are liable to "sport" and become permanent improvements in other and valuable characteristics, the most prominent of which is honey gathering.

ANSWERS BY DR. TINKER.

Mr. D. A. Pike has made no secret of the fact that he has in-bred his strain of bees for a long time, the object being to produce a strain of white-banded bees. He has made the same mistake that a number of other breeders have made in breeding for color. They have invariably ruined the working quality of the bees. But Mr. Pike was not obliged to in-breed so closely to produce his strain, for his were not the only white-banded bees that had been seen. There have been many imported queens whose worker progeny were more or less white-banded and such bees can be found in most of the large Italian apiaries, none of which are related to Mr. Pike's bees. Not long since Mr. W. S. Kline of Bolivar, O., obtained an imported queen of A. I. Root that produced many large and fine white bees. My own stock of Syrio-Albinos were bred up from a Syrian queen, an Italian queen of my own importation, whose workers were mostly white-banded and a few choice queens from Mr. Doolittle's fine strain of Italians. By selecting queens and drones according to the rules published in the January number of the "Api" I have produced a strain of white bees in the space of four years that are in-bred to no great extent. But all of my best queens were mated to select drones at an isolated mating station in the country at which I have rarely failed to get queens mated as desired.

To prevent deterioration of my stock from in-breeding, I have already introduced a fine Albino queen from Mr. Abbott L. Swinson and engaged a num-

ber of others. Mr. S. has also produced a strain of white banded bees that are not related in any way to Mr. Pike's stock, and now has one of my best queens in his apiary for breeding purposes. By interchanging stock from distant apiaries we can steadily improve the beautiful white bees both in regular markings and in working qualities.

The vigor of my own stock is shown from the fact that no other bees in this locality did as well the past season in producing comb honey, the largest yield, exceeding by 75 pounds the best record heretofore made in this county. My best swarms produced from 80 to 144 pounds each of comb honey in one-pound sections. As the above yields were from white clover alone it is safe to say that my stock has not been injured by the limited in-breeding practised.

Could Mr. Pike get his own stock back again, pure, it would be only a continuation of in-breeding to cross his bees with them. But the chances are few that he could get his stock back pure, and hence, this move is one that Mr. Pike should make, if not already too late from long and persistent in-breeding.

There is no question about the result of the continued in-breeding of bees. The queens become unprolific and the workers indolent, and I think the vitality is also seriously impaired. They become, in fact, like some of our high class in-bred poultry,—so delicate that they must be cooped up in warm quarters beyond the reach of cold and wet. Even then they are poor sickly things as compared with the average dung hill fowl of the farm. Yes, it is "good policy to infuse fresh blood into the apiary by introducing a few strange queens each year."

In regard to the extent that in-breeding may result in an apiary of 50 colonies it should be remembered that young queens never mate with brother drones, if there are others to be found having a foreign scent. I have tested this matter a number of times and know that a queen will not mate with a drone from the same hive, even though not related, until after many fruitless efforts to find other drones. If the instinct of the queens is against close in-breeding, we may well take caution and profit accordingly; for, if nothing else happens the working quality of the bees will be impaired.

ANSWERS BY J. E. POND.

1. I have never considered the so called Albino bee, anything but a light colored Italian. Some years ago I bred a queen that I afterwards sold to Mr. Henry Alley, whose workers and drones were both the most beautiful light yellow in color I ever saw, far exceeding in beauty (if light yellow is considered beauty) and gentleness any bees I ever saw; in fact more than half the workers from this queen showed four distinct yellow bands. Mr. Alley can tell the rest of the above story. The mother of the above mentioned queen was from Bradley's stock; and, while a good prolific queen was not, particularly handsome and the drone that must have fertilized said queen was hardly medium in color. The above workers were quiet and gentle as flies, and for honey gatherers, were about as useful.

I have never thought that in-and-in-breeding could injure bees to any extent, as it is almost impossible to breed so closely as to cause damage; neither do I think that the so-called Albino is the result thereof. It is a fully proved fact to myself that Italian queens when bred here for some time and purely mated, and cross mated too, will gradually grow more and more light yellow in color. The term Albino as applied to bees is a misnomer; when understood, however, to mean light yellow in color it may be used, but never correctly. I do not think the albinos can be either made or preserved as such by in-breeding and while I think as above stated, I still think it well to infuse new blood occasionally, from well known and reliable sources.

I have seen Albinos of the Pike strain(?), that no one could tell from Italians, and not very light colored ones either; and the queen, mentioned in the first part of this answer, produced workers much lighter in color than any albino I ever saw. In regard to strains of Albinos I don't believe in them, and I know that Mr Alley breeds queens every year that are not Albinos, yet still are equally as handsome, prolific and good honey gatherers as any ever bred any where. Mr. Doolittle, after years of testing, prefers the bees bred by himself to the imported, and his strain has been bred by him for years. As a matter of fact the term Albino to me is synonymous with humbug.

Foxboro, Mass.

IMPORTED QUEENS.

Query No. 7. Does the continued importation of Italians improve our bees, or not? In your opinion, would the Italian race of bees deteriorate should no fresh importation of queens be made for ten years?

ANSWERS BY DR. G. L. TINKER.

I believe that we require no further importation of Italian queens to prevent deterioration of the stock we now have; but breeders will have to infuse fresh blood into their apiaries often if they would continue to improve their stock. This can now be done for we have more Italian bees in this country than they are in Italy.

I could not recommend "hybridizing the different races," nor is it necessary in order to maintain a steady improvement of our stock of Italians, though we discontinue to import them.

It has got to be with imported Italian queens as with many other things, it is all in the name. We now have better Italian bees than they have in Italy; and the apiarist, who gets a first-class home-bred queen and crosses directly with his own stock of Italians, will invariably see an improvement in the new stock, and my belief is, that the result is as favorable in developing working qualities as in the cases of hybridizing. We hear much about the superior working qualities of hybrids because beekeepers fail to cross their stock as much as they should with unrelated stock. I am a strong advocate of crossing the different races of yellow bees and believe grand results will follow selective and well directed crossing. I would again respectfully refer the apiarist to my answer to query No. 1, for an intelligent and reliable system of procedure.

New Philadelphia, Ohio.

ANSWERS BY J. E. POND.

As I have never bred queens to any great extent, I cannot answer this question save from the basis of information and observation in the apiaries of others. Mr. Henry Alley and Mr. G. M. Doolittle have both been breeding for years from home strains, and I deem it safe to say that both of them produce bees that cannot be excelled by any in the world. As a matter of fact, the purely bred Italian is Italian still, neither more or less, no matter where bred; but when we know that our home breeders use far more care and skill in breeding and mating than is done in Italy, we are perfectly warranted in assuming that, as a rule, home-bred queens kept pure as can easily be done, are superior to the imported, and that by infusing pure blood at times from the best home breeders, we can keep our stock superior for any length of time. I say by "infusing pure blood at times, etc.," not because I really believe that in-and-in breeding will do any damage, but, because so many do believe this, it is well to keep on the absolutely safe side.

When I am assured that cross-mating or hybridizing as it is miscalled, results in benefits, then I may be able to answer; as yet, I have never found any permanent benefits result therefrom, and do not believe it possible that such can be the case.

ANSWERS BY C. W. DAYTON.

The continued importation of Italians does not improve our stock and should there be no fresh importation our stock would not deteriorate, as I believe the crosses to be preferable to pure Italians and that the Italian is the predominating race of America at present.

It would be as advantageous as the hybridizing of the different races. But the benefits of such propagation would fall behind that propagation that involved the selection of breeding stock possessing the most valuable and necessary characteristics for the promotion of our welfare.

Now that we have searched the earth and secured the best race of bees and therewith produced the best strains, future development depends upon artificial improvement of the bees whose traits we thoroughly understand.

These queries are altogether too broad for one or even a dozen persons to ascertain their certainty: therefore I have spoken from my limited observations and practice coupled with the general knowledge of like conditions in nature.

Bradford, Iowa.

SHADING HIVES.

Query No. 8. Is it necessary to shade the hives in the hot months of summer? I have no natural shade and use a 2-story hive for comb honey.

G. SIEBOLD.

ANSWERS BY HENRY ALLEY.

1. Yes. It is a good plan to shade the hives if the apiary is so situated that the wind does not have free circulation.

Bees will not suffer from heat in hives that have large entrances, say ½ inch high by 10 inches long, provided the hive is painted white. Hives painted a dark color will attract the rays of the sun, and therefore should be placed where the sun will not strike them. Hives that have loose bottom-boards may be raised about an inch at the front, which will admit of plenty of air.

Bees can not work in the sections or upper story of the hive when the temperature outside is among the nineties in the shade, unless properly ventilated. When the bees are "laying out," then give more ventilation. We do not believe in shade for bees unless the weather is very hot. In spring give the hives all the sun possible, and you will see that the colonies in the hives that get the sun all day will be two weeks ahead of those in the shade.

Wenham, Mass.

THE SIMMINS' METHOD FOR INTRODUCING QUEENS.

Query No. 9. What is the Simmins method of introducing queens? Who is Simmins, anyhow?

ANSWERS BY SAMUEL CUSHMAN.

Mr. Simmins does not favor caging queens when they are to be introduced. He always introduces direct. What he calls his original method is as follows. The queenless colony is opened, all the combs are exposed to the light and spread so that bees are separated and do not hang from one comb to another. A comb with queen and attendant bees is then taken from the desired hive, thoroughly exposed to the light and introduced. Combs are left apart so each comb of bees are by themselves.

The plan is that "a queen parading unconcernedly upon her own comb and among her own bees" can be safely inserted into any desired hive.

Both colonies are first smoked. Syrup and scents are useless.

If the queen is received from a distance, a corner of the quilt is lifted, bees smoked and she is allowed to run in alone. She is first kept warm and alone without food for thirty minutes.

He also confines the bees and when they have missed the queen one is dropped in among them, similar to the plan made known by Mr. Doolittle. Hives are not opened for forty-eight hours.

Mr. S. Simmins of Rottingdean, Brighton, England, is a prominent beekeeper of that country, a writer on bee topics, author of "Simmins' Original Non-swarming System," and "Direct Queen Introduction." He is evidently a live man who keeps well posted and up with the times. In his advertisement in the British Bee Journal he says, "Owning the largest apiaries in the Kingdom I can offer great advantages to those who wish to study the true economy of practical beekeeping. My attention is devoted exclusively to the production of honey and breeding of bees, while all needed appliances are made on the premises for home use."

I have referred to his "non-swarming system" in another article.

We hope Mr. Simmins will tell us through the columns of the "Api" the number of swarms in the great Sussex apiaries, and what he does and how he does it.

Pawtucket, R. I.

ADJUSTING DRONE TRAP TO CHAFF HIVES.

Query No. 10. How do you attach the drone-trap to chaff-hives, or those having an entrance like the Falcon, on which traps will not stand securely?

1. How can the drone-trap be attached to Simplicity hive without alighting-board, and entrance is made by sliding hive forward on bottom-board, the entrance being full width of hive front?

2. Mr. Manum says on page 260, Vol. IV, of "Api" that his summer entrance is ¼ + 14 inches. This is the Bristol hive I suppose. Is the enormous entrance to give thorough ventilation? How does he prevent robbing when so greatly exposed? Do you consider such size entrance an advantage, or otherwise?

ANSWERS BY HENRY ALLEY.

1. I can not answer this question as I never saw the Simplicity hive. Such an entrance, as is described, would not suit us. Almost any man could find some way to attach the trap to a hive, as it requires but little ingenuity to do so. All that is necessary is so to ar-

range the entrance and trap that the bees will be compelled to pass through the perforated metal.

2. The entrance to the Bristol hive is no larger than is generally used in the Langstroth and several other hives. It is made large for ventilation and to give the bees plenty of room to pass out and in. If a colony is weak in numbers, robbing may be induced and encouraged by a large entrance, but the careful beekeeper would not allow such a colony to be thus exposed for a great while, especially if the bees were not at work gathering honey. All that is necessary in order to prevent robbing is to contract the entrance to about one or two inches. We consider a large entrance an advantage both in summer and winter.

EDITORIAL.

Honey Market Reports. — We are hardly ready to comply with Dr. Tinker's request which he makes in another column of the "Api." It strikes us that it is the shipper of honey who is responsible for the low prices and not the middle man. If honey or other goods are sent to the commission men to sell at the best price obtainable, what does the producer expect in return? Does he intend for the commission man to hold his goods (which is certainly the proper way) until a good price can be realized? In most cases honey is sent to any one who will take it to handle, to be sold for the best price that is offered and the bee man is easily frightened you know. Why not ship the honey and say: sell this honey when such a price can be obtained for it." I am aware that a few bee men can control the honey market. Now, suppose twenty honey producers raise twenty tons of honey and it is sent to market to be sold, say at 20 cents. Well, now suppose one man raises twenty tons alone and he sends his honey to the same market and says "sell at 18 cents." Who controls the market, the twenty men who produce the twenty tons or the one man who raises the same amount? This is not an imaginary case. I think this same thing has occurred in Boston and the little trick made us the loser to the amount of several hundred dollars. Well, now let us suggest a plan that may solve the difficulty. Supposing three or more persons (or as many say as there are cities from which honey quotations are made) are chosen to fix the price at which honey shall be sold each year. The persons chosen should reside near the large cities, and at the proper time let them visit the market for the purpose of looking the situation over. If much old honey is still held by the dealers, that will of course have something to do about fixing the price for new honey. When the price is settled upon, they report to the various bee journals the sum per pound which honey must be sold for and then have it understood that this is *the* price. If possible, some person might be found in each large city who would undertake to handle all the honey raised within a radius of several hundred miles. If such a plan could be brought about it would be an admirable one. Except in the matter of shutting out the market reports, we are heartily in sympathy with everything expressed in Dr. Tinker's article.

There is plenty of time before another season to discuss this subject thoroughly and to fix upon some plan that will do justice to all. Come, friends, give us your ideas in as short articles as possible.

"Simmins' Non-swarming method" is noted in another column by Mr. Sam'l Cushman. If we rightly understand the method as presented by Mr. Cushman, swarming is prevented by often removing some of the combs near the entrance of the hive and compelling the bees to fill

the space with new combs. This, in our opinion, will not prevent swarming; but the fact that a hive is often opened to cut the combs away will have a tendency, in a measure, to break up the swarming fever.

The idea that the bees will cut a passage way along the bottom-bar when combs are reversed is most absurd. We practised reversing considerably last season, and nothing of the kind was seen in any of the hives reversed. Why do not bees, whose combs have been transferred to frames filled solid with combs, cut such passage-ways? Has anyone ever seen anything of the kind? When we transfer combs from one frame to another or from a box-hive to frames, the combs are placed in the new frames without regard to their former position in the old hive, or frames. We beg leave to differ with Mr. Simmins on this as well as on many other points.

On the matter of feeding dry sugar, Mr. Simmins' experience differs widely from nearly all who have tested the matter in America. It has been found that a large percentage of sugar fed dry will be removed by the bees.

One more point we wish to touch upon. Speaking of the queen, Mr. Simmins says: "She actually lays eggs of three kinds, because each is deposited in a cell which is of different construction to the other and each is destined to become a distinct being."

Very few persons will agree with Mr. Simmins in this statement. It certainly does not harmonize with our experience. The fact that any worker egg will produce a queen when the larva is properly nursed, and also the fact that queen cells are built directly upon the side of a comb, rather upsets the distinguished writer's theory. During swarming time the combs are loaded with brood, pollen and honey, and the queen is hard pushed for room in which to deposit eggs. At such a time, eggs may be found in any part of the comb, where the cells are one-eighth of an inch deep. At this time, when bees have a notion of swarming they will start the small queen cells, or cups, on the edges of the combs. The queen comes along and will drop an egg in them, and a cell queen is soon constructed; if the colony does not swarm the egg is removed. We may be in error about it, but the above is in accordance with our experience. We have no doubt that the treatise by Mr. Simmins is a valuable one and should be in the hands of every bee-keeper.

It is good policy to use every expedient to educate the people to know that honey is the most healthful sweet known, and especially for children it is infinitely preferable to candies and is generally preferred by them. Beekeepers everywhere should hand to the editors of local papers short articles on the use and value of honey as a food and as a medicine. They will be glad to publish them. The article just published in these columns entitled "Honey as Food and Medicine," should be widely circulated.

Do not set bees out of their winter quarters for a flight, if an occasion offers, as long as they are doing well until there is something to gather. But if they are found to suffer from accumulations of fæces they had better be given a flight. One or two colonies may be taken out as a test whenever the weather is suitable.

About the first of February bees begin to breed when the temperature should be raised by artificial means, if necessary, to a point just below 50° to insure the best results. The temperature should range between 45° and 50°. If they become very uneasy or noisy, giving water on a sponge at the entrance

will often speedily quiet them. In heating cellars no smoke should be allowed to escape from the stove into the cellar and the light should be shielded from the bees by any suitable means. Passing among the bees with a faint light does no harm.

Write it down.—When you think out a good thing or get a good point, write it down.

It may prevent your forgetting it and save some brain racking when you wish to recall it.

Keep pencil and paper with you when in the honey house or among the hives and stop in the midst of your work when you have a suggestion or thought worth remembering and write it down.

Bee papers would have better articles than they do if all followed this plan. Articles written while under the inspiration are the most forcible and telling.

If you have any pet theory or train of thought write it down ; it may otherwise be forgotten. Then, when you have time, arrange these thoughts and send them to us. Never mind if any one does pitch into your ideas, remember no one knows it all. We are all weak or in error on some point. You may be able to contribute your share to the general fund of knowledge.

Again, I say, *write it down*, and before you send it in "*boil it down.*"

The October "Api."—We hope every one who receives this number will read Dr. C. C. Miller's review and criticism, found in another place, of the essays published in the Oct. "Api." The doctor rubs us all down so nicely and smoothly that what he says is very interesting reading. That's right, doctor, pitch into the editor, manager, correspondents and all, show up the weak and strong points. So far as the allusions to the editor are concerned, no defence will be made at this time. Perhaps in a future number, we may allude to the matter, and if possible explain the meaning of the short editorial remarks referred to by our esteemed correspondent.

Our Price List.—We have no price list or catalogue of any sort except what is found in the last pages of each number of the Apiculturist. Please examine every page of the "Api," as there is something of interest to all.

Imported Queens.—In his answer to query No. 7, Prof. Cook says, "unless Italian bees from Italy are superior to our own—and why should they be?—we gain nothing by importing. If ours are better than imported stock, we lose. I believe we have as good here. If not, it speaks ill for our breeders."

For years we have contended that our American Italians are superior to any stock ever imported, and when occasion has presented an opportunity, we have expressed our opinion on such matters. Some breeders advertise "Queens reared from imported stock only." That is one of the "tricks of the trade." Our American breeders will improve any race of bees they propagate. American beekeepers are in every branch of apiculture far ahead of any nation in the world.

There is an American (?) somewhere in Europe who has "boomed" imported stock about all it would bear. Now that beekeepers here have discovered that imported Italians, Cyprians, and Syrians are almost a humbug that same person is "booming" the Carniolans. This latter race was tested five years ago in the Bay State Apiary. They are not half as good as the Italians.

The careful queen-breeder makes frequent additions of fresh stock for the purpose of infusing new blood into his apiary. One need not send to Germany or Italy for queens, as there are so many queen-dealers in this country that an occasional exchange of queens with some other dealer will certainly prevent any bad results from in-breeding. No in-breeding is ever practised in the Bay State Apiary, as no queens are reared from the queen whose drones we use, nor is a drone reared from the queen whose eggs we use for cell-building.

Our Own Bees. Up to date, our bees are in fine condition. None of any account have died, although there are more dead bees about the hives in the cellar than about those on the summer-stands.

One day when the temperature outside was 5° below zero, I thrust my thermometer down under the six inches of packing (planer shavings) to the cloth honey-board, and when it had been there two hours the glass indicated thirty-two degrees above zero. This one experiment satisfies me that it pays to pack bees for the winter. Had there been no packing the temperature would have been about as low in the hive where the thermometer was placed, as out of doors.

All who Subscribe for the APICULTURIST from January 1st will receive one of our combined drone and queen-traps free by mail. This is our method of introducing the APICULTURIST and our drone and queen-traps into every town and city in the United States.

Those who receive the trap as a premium must not expect to get the Handy Book or a queen for fifty cents, as the profits are so small that only one premium can be given each subscriber.

We do not advertise to give premiums to those who subscribe through other parties. We pay news' agents a percentage on all subscriptions sent us, and if you choose to give the agent a profit instead of sending direct to us, it is no fault of ours.

See CLUB LIST on another page.

For Thirty Days from date the price of the drone and queen-trap will be $3.00 per dozen in the flat with one made up for model to work by. When you order, we will send the nails required to make each dozen if you mention the fact that you desire them.

Where the trap is used, there is no cutting or climbing into high trees to get your bees. No swarms will be lost. By using the trap one can have his young queens mated to any of the drones in the apiary he chooses.

We have one hundred dozen traps packed and ready for shipment. One hundred traps, including nails and all materials will be sent for $20. Bear in mind that any one who purchases traps of us can sell them anywhere in the world.

We will pay one-half of the express charges, when the traps are ordered in lots of 50 or 100, to any place where the American express has an office east of the Mississippi river. For $3.50 we will pay all express charges on each dozen, as per condition on one hundred lots.

Calendars.—We have received the *phrenological calendar* by Fowler, Wells & Co., 753 Broadway, N. Y. It is most unique and attractive, consisting of a beautifully lithographed phrenological head, engraved on stone and printed in colors, showing the location of each of the phrenological faculties, with its natural action which is indicated by especially artistic illustrations. Sent by mail, post-paid, on receipt of ten cents in stamps. Address as above. Mr. Alley:

Has any part of the "Beekeepers' Handy Book" been printed in the American Apiculturist? J. C.

This inquiry was received some time ago. We answer no, not over four pages of it has ever been printed in any bee journal or work upon bee culture. The contents of the Handy Book is the result of twenty-two years' practical experience in bee-culture by the author, and contains no old history or useless words.

Be particular when you send for circulars or copies of the "Api" to give the right address. Last week a person sent ten cents for a copy of the October number and gave the name of the town, plainly written, Mount Centre, N. Y. The "Api" was mailed, but the next day it was returned marked "*no such office in the state.*" We looked over the list of post-offices and could find no such office in the United States. Another person gave the name of a town Frymoyers, Berks Co., Pa. The "Api" sent met the same fate as the other. There is no such place in the county as "Frymoyers." These persons will not know why they do not hear from us, and will say "It's of no use to send to that place for anything, you will never hear from it again." Every communication received at this office is answered promptly, generally the same day it is received. "Subscription received" is stamped on the wrapper of the first number of the journal sent to new subscribers who send cash with subscription, and in such cases we do not think it necessary to acknowledge the receipt of money by postal card.

Bound Vols. I and II. We have about one hundred copies of these two vols. handsomely bound in one book. We will mail free one copy to each of the first one hundred persons whose subscriptions are sent in from this date (Feb. 1). We also have about fifty copies of vol. III bound in cloth, and these will be sent to the next fifty subscribers. When this supply of

books is exhausted, the drone and queen-trap will be mailed according to offer in another place. When subscribing, please say which of the above premiums is desired.

AGENTS FOR TRAPS.

Messrs. Thos. G. Newman & Son, 925 West Madison St., Chicago, Ill., are our agents for the sale of the Drone and Queen-traps. Parties west of Chicago, as well as those residing within a radius of a few hundred miles of that city, who desire from one dozen to several dozen traps, can save something in freight and express charges by ordering of the above firm. All who can conveniently do so should order traps early, as the trade in them the coming season will be immense, and there may be some delay in filling orders later in the season.

HONEY REPORTS.

For the American Apiculturist.

DEAR EDITOR:—You have doubtless seen the movement on foot by M. M. Baldridge in the "American Bee Journal," page 774, to shut the reports of commission men out of the bee periodicals. Well, I think Mr. Baldridge is right, and that the course of commission men in running down the prices of our products is very damaging to the journals and to beekeepers alike. It can surely *profit us nothing* to have such low quotations published in any paper, much less in our bee papers. The space taken is practically an advertisement for the commission men for which they could well afford to pay full rates for their damaging "reports." But I do not think our journals should publish such reports at all, and I would earnestly solicit you to discontinue them hereafter from the columns of the "APICULTURIST." Let us have reports from a committee of honey producers or from any one interested in the cause of the producers, and it would be better to give rates higher than honey can be sold at, than to publish ruinous and unprofitable prices.

All honey producers should put their honey in the hands of retailers and ship directly to them in all cases leaving the middle man out entirely. The *beekeeper*, not the commission man, should dictate the price at which the honey is to be sold. Then pay a reasonable commission for selling, say fifteen per cent and await returns at intervals when the honey is sold. But I would sooner give twenty per cent than to put my honey in the hands of middle men to speculate upon as they are sure to do to our injury.

I have sold all of my honey for years in this manner and believe it to be the most practicable plan that can be adopted both for the beekeeper and the retailer.

Please give this matter your thoughtful attention as it seems to be worthy, and let us hope that beekeepers will cease to allow other people to dictate prices. I feel sure that when all consider this subject well that they will heartily commend the effort being made to suppress those who seem to have no interest whatever in the welfare of honey producers.

New Phila., O.

"What is it?"—Our remarks under this heading have brought us several communications with reference to this same point.

Mr. L. T. Hopkins of Conway, Mass., writes thus:—

"I see by the November "Api" you have doubts about bees working on honey dew in the afternoon. I had more of the stuff than I wanted the last of August and first of September gathered from walnut and oak leaves, the bees working all day, but gathered fastest before the dew dried off in the morning, or when there was a fog or mist all day. There were millions of insects on the under sides of the leaves. Some trees were so covered with the dew it would run off on the ground.

The trees were alive with the bees; one would think by the buzzing that a swarm was clustering there. The honey is very dark and bitter and candied in the cells about as fast as the bees gathered it. The hybrid bees stored a good deal more honey than the Italians.

I am experimenting with this honey-dew honey for winter stores, so if it ever comes this way again I shall know whether bees will winter on it or not.

Would this honey-dew honey be of any use to a queen breeder?

Bees gathering honey dew as late as last of August is something new, certainly. We think honey dew is secreted only in July and early in August. At the time Mr. Conway says his bees were gathering honey dew, our bees were working smartly upon the golden-rods and other tall flowers. Such poor quality of honey will do to feed bees while they can fly out, but honey dew is unfit for winter stores. "What is it" is more satisfactorily explained by Mr. C. W. Smith of Wellesley Hills, Mass., who resides about twenty-five miles from our apiary, and in his opinion we think he is correct. It is as follows:

In November "Api" page 213, you ask: "What is it?" "It is *honey* from "common meadow sweet" grows in wet ground, shrub, smooth bark, twenty to thirty inches high, leaves oblong or lance-oblong and wedge shape; flowers in a crowd, panicle, pale flesh to white color, calyx 5 cleft, petals five, broad or roundish, pistils five, making little pods with few seeds in each side. Honey dark, tastes like fine molasses.

The description of the honey both as to color and taste is perfect. We have 2-1 lb. sections of such honey brought here by Mr. G. Hervey, of Blackstone, Mass. His apiary is situated about twenty-five miles from Wellesley Hills. The honey has no decided flavor, nor is it unpleasant to the taste; as Mr. Smith says it is like fine molasses. We are glad to see this question answered correctly, as some of the bee journals have said it was honey-dew; while we expressed the opinion that it was not for reasons we have before stated. Bees will winter well upon it.

A FEW MILD CRITICISMS.

A writer in one of our exchanges says, "The best hives and appliances are not patented and never were." Where has that fellow been all his days? He certainly is not posted on bee-hives and other appliances used in the apiary, or he would make no such statement. The Langstroth hive was patented, and hives made on the same principle are now being used by nearly 90 per cent of all the beekeepers in the world. The best thing that fellow can do is to post himself regarding bee matters and then tell us "old vets" what he knows about patents on bee-fixtures.

Another person whose article appeared first in one of our American bee-papers, and then in a foreign journal, cautions beekeepers against being in "too much haste about purchasing new articles" before they have been tested and found good. Had such advice been suggested and heeded by beekeepers generally, we should all be using old box-hives, nail casks, etc., and the advantages of the movable-comb hive would have been unknown outside of Mr. Langstroth's apiary. It is a queer idea that a few persons must go to the trouble and expense of testing all new articles and appliances, and then give the results of their experience to people who will not in the least appreciate them. The progressive and successful beekeeper is the one who conducts his own experiments and is not dependent on his neighbor for new ideas nor is he several years behind the times in adopting new improvements. It costs but little to test any hive or article used in the apiary. Purchase them, gentlemen, and keep pace with the

improvements that are being made in bee-culture every day in the year.

At a convention held in Kansas a few weeks ago, the subject of reversing hives, etc., was discussed. One speaker stated that he had tried reversing the lower story and found it a bad practice, and a neighbor who had tried reversing met with like results, and so a vote was taken which "resulted unanimously" against the practice of reversing hives and frames.

Why should a few persons condemn a practice, of which they know nothing, on the mere statement of the experience or inexperience of only two persons? All but one member voted against a practice of which they knew nothing as far as personal experience goes. Don't go too fast, friends.

"It is just as natural for bees to swarm as it is for birds to build nests and to rear their young. This is the way Providence provided for bees that they might not become extinct. But I know by experience that bees placed in a rightly constructed hive, with a certain number of cubic inches to fit its colony in the brood-chamber, and plenty of surplus room on top (never at the side), will not swarm."

Our friend who wrote the above is thinking of getting up a boom for his non-swarming hive. Certainly his experience is very different from all other beekeepers. Bees will swarm even if they are in a hive as large as a meeting-house. But don't our friend rather contradict himself just a trifle, if we compare the first two lines with the last one?

GLEANINGS FROM CORRESPONDENCE.

Longly, Wood Co., O.

MR. ALLEY:

I cannot speak too highly of the $3.00 queen I bought of you. Would not take $25.00 for her.

IRA WITMORE.

Sheboygan Falls, Wis.

MR. ALLEY:

Back numbers of the "Api" at hand and I am more than pleased with them. Like the "Handy Book" they seem just as original and compact and practical as possible, both form and matter.

MRS. H. HILLS.

Milledgeville, Ill.

HENRY ALLEY:

The "Api" is an excellent Journal, and is filled with solid instruction for the novice and the older ones, too. I have been a beekeeper for eight years.

F. A. SNELL.

Barrington, R. I., Jan. 6, 1887.

DEAR SIR:

I wish to congratulate you on the excellence of the "Api" for Jan., '87; it is the finest specimen of a bee periodical I have ever read. It is needless to say that I would not miss its visits for a good deal. I only wish they were more frequent.

A. C. MILLER.

Pawtucket, R. I., Jan. 8, 1887.

FRIEND ALLEY:

The January number *was* a surprise to me. There have been many good articles in the past numbers that it would be hard to equal, but the las number, taken as a whole, is the best number of the "Api" I have ever seen. In my opinion the Questions and Answers are the most important part of any bee journal, even when but short answers are given; but as you now conduct this department, it is the best thing of the kind in the bee periodicals.

SAMUEL CUSHMAN.

Woodstock, Va.

MR. HENRY ALLEY:

You recollect that I complained of the queen you sent me. I will now say that the bees from that queen are the most beautiful in my bee yard.

My way of introducing queens is to take out the old queen, put the frames all back in the hive except one, and leave that space in the centre of the hive; then the introducing cage is hung down in the centre space with the attendant bees and left there thirty-six

hours, then I remove the tin slide so that the bees can remove the sugar and release the queen and attendant bees. I put the cage in as soon as I remove the old queen. Have never failed.

NAASON WISMAN.

We make the following extract from a private letter received from one of our most prominent beekeepers and writers on bee matters:

The APICULTURIST under your management is second to no other Journal. Every issue is full of interesting and highly practical matter. Your question department I like better than that of any other, as one is able to express something like a complete answer. Wishing you the success that you deserve, I remain, etc.

Another prominent beekeeper, and one whose writings are found in every bee publication and whose name is familiar to every beekeeper in the land, writes thus:

"I wish to commend you for the intrinsic value of the "API" since you took it. It has been solid full of valuable matter, worth many times its cost.

FROM "GLEANINGS IN BEE CULTURE" JANUARY 1, 1887.

We congratulate friend Alley on having given us another number containing so many good things. I am especially pleased with his remarks in regard to procuring good queen-cells, on page 24.

[Thanks, friend Root, we fully appreciate the goodwill and kindness expressed in the above. We prize it all the more, coming as it does from one so thoroughly competent to judge of the merits of any publication.

Since we took charge of the APICULTURIST in August last, the two leading bee publications in the world (*Gleanings in Bee Culture* and the *American Bee Journal*") have, on several occasions, shown their good will and friendship towards the APICULTURIST. While we do not care a snap for the opinions of some bee papers, whose existence we do not care to advertise even when paid for doing so, we do appreciate the favors shown us, from time to time, by the publications named above.]

The Apiculturist goes to press on the 20th of each month, and is mailed to its subscribers five days later. If any one does not receive it in the course of ten days from the date of mailing, he should notify us at once and we will forward another copy.

The Quinby Smoker.— A description of the improvement made in this well-known smoker was given in the "API" some time ago. We now have a lot of them on hand. This smoker, as now made, is the most perfect of any bellows-smoker in the market. The good points are these: if the fuel is dry, a smoke can be had in a minute's time by merely applying a lighted match to the "fire-hole" at the base of the barrel. Those who use the old style Quinby smoker are obliged to go to the stove for a coal of fire in order to ignite the punk.

Our Club Rates.

Am. Apiculturist and Am. Weekly Bee Journal,	$1.80
Am. "Api" and Gleanings (semi-monthly)	1.90
" " " Bee Hive (bi-monthly)	1.00
" " " Beekeepers' Handy Book	1.50
" " " Cook's Manual	1.70
" " " A Year among the Bees	1.50
" " " Alley's drone and queen trap	1.00

"Subscription Expired" will be stamped on the wrappers of all whose subscriptions expire with any number of the APICULTURIST. If the reader desires the paper continued we shall be glad to do so, provided he makes known his wishes by dropping us a postal card. Otherwise the "APICULTURIST" will be discontinued when the subscription expires. We invite all to renew and send us with their own subscription at least one new one. All who will do so may deduct twenty per cent for the trouble they take in the matter.

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., MARCH 1, 1887. No. 3.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt delivery. Workmanship unexcelled.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our best queens at any time between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass

For the American Apiculturist.

CHEAP HONEY FOR ALL, ETC.

G. W. DEMAREE.

I have seen some words like the caption of this article, in several of the bee papers from time to time, "Cheap honey for all;" yes, for the laboring man, and for the little school children whose fresh palates can appreciate in the highest degree the delicious sweets of earth. How unselfish that looks when viewed from the producer's standpoint; but it is coming to that, no matter how many organizations may be effected to "pool" the honey crop, and to "bull" and "bear" the markets. The time is coming when the rich and the poor and the little ragamuffins, all are going to eat honey before a great while. Nature has provided enough for all, when sufficient knowledge has been gained on the part of apiarists to have the secret storehouses of nature unlocked and their precious contents poured into the markets. Honey is bound to be cheap, as well as other good things of earth. It is no more than justice to those who labored for years and years to develop a system whereby the production of honey might be made easy and reasonably sure, that they should reap large profits from high prices for honey as some compensation for their public spiritedness. But any person of ordinary perception and forethought ought to see that *high* or *fancy* prices, as we say, must of necessity be temporary, because if honey-producing is to become a business occupation, it must necessarily pass under the laws which throw restrictions around all like businesses. I mean that supply and demand will govern prices of all produce. We are told that honey is a luxury and therefore not governed by the rules which control the necessaries. I answer, it may be so, and may be not. When an article that is a luxury is thrown on the market in excess of the demand, the very same thing occurs that we see when the market is glutted with a necessary of life, viz.: the price tumbles.

The tobacco growing districts of the country are now experiencing a fair illustration of the position I have taken. Tobacco is a "luxury" and very many people believe an *objectionable* luxury, and because of the huge crops of the "weed" in the past three years, the same article of leaf tobacco, that sells dull at four cents per pound now, would have brought from twelve to sixteen cents per pound four years ago. Supply and demand govern the price of luxuries as well as necessaries. High prices for honey is a thing of the past and will remain a thing of the past unless there is a failure to produce honey

for several years together, which would spring the price of honey temporarily but not permanently.

The facts are before us and to sit down and whine, or to get up and organize syndicates or any other sort of societies, having for its purpose the forcing of high prices for honey, will and ought to be a failure. What is the remedy then? My remedy is to produce honey cheaply by means of better constructed hives and implements, and by cheaper methods of handling the bees and the honey crops and by curtailing expenses in every way that economy dictates. "Patent hives" are a luxury that may be dispensed with; good plain hives capable of enlargement and contraction, under proper management, will give as much surplus honey as any patent hive will give, and by the "close process" advocated by J. E. Pond, jr., any and everything that can be done with any of the complicated patent hives can be done with a plain Langstroth or American hive. Let us quit feeding sugar to our bees, thereby enlarging the honey crop, and above all we must develop the honey market, pushing our trade to every nook and corner of the land.

Christiansburg, Ky.

For the American Apiculturist.

QUEEN-REARING.

O. O. POPPLETON.

I was much interested in your criticism on Dr. Miller's "A Year among the Bees," on page 25, of the Jan. No. of the "Api" and want to indulge in not exactly a criticism, but a discussion of your remarks.

Some time ago, after having used your system of rearing queens for two or three seasons, I wrote out what might be called a review of the "Handy Book," calling attention to several of what I thought were strong points, and also to several details which I had found could be changed with profit. This article was accidentally lost, and I never took the trouble to reproduce it, but among the other points noticed was this one of leaving every third egg removed instead of each alternate one. I have not seen Dr. Miller's book, so do not know what were his reasons for this change from your instructions, but mine was briefly this: When each alternate egg was left, the cells would be built so closely together that it was usually quite difficult to separate the cells from each other, without injuring their occupants, if not entirely impossible at times. Leaving every third egg only makes this operation much easier and pleasanter to do.

Now, if the objection you raise against leaving only each third egg should prove true in only a small minority of cases even, it would be conclusive and a settler, but it has not been true in my experience, and I judge not in Dr. Miller's either, else he would not advise it. Just why so many similar differences, as this one is (of facts, not theories), should be continually arising among beekeepers, is puzzling many of us, but is difficult of explanation. This point of difference in quality of queens is one which I observed very closely, as it is at the very foundation of our business, and I couldn't detect any difference whatever in the quality of the queens raised by the two methods. I can think of, or imagine, but one reason which may account for our different experiences, and that is that while you, as a breeder and seller of queens, are forced to raise many of them out of a honey flow, I, who only rear queens for my own use, always rear them during a honey flow. This may or may not account for the different results.

COMPARATIVE CROSSNESS OF THE ITALIAN AND GERMAN BEES.

On page 11, Jan. No. of the "Api"

Mr. Heddon gives us a very ingeniously-constructed theory on this subject, one which it seems to me is much more cute than correct. It is true that nine-tenths of the stings we receive are from bees that are on the wing, and the black bees are much more inclined to take to the wing than are Italians, but is it not also true, that nearly all angry bees become so before leaving their combs, and left them because of that anger? Do bees usually become angry while on the wing, unless struck at or otherwise interfered with? Aren't most of the stings we get, from bees that dart from the combs, and not from those that are flying around in the air? The bees I always fear are the fellows that stand around on the top of the frames, or some other good place for a lookout, and watch every motion for an excuse to jump at somebody or something, and if they see an unlucky motion, they usually go "straight as a bee" to the hand or face. After having taken wing, they remain there on the war path, giving the impression to casual observers that they became angry while there. All know how necessary it is that while working among bees, our motions should be quiet and deliberate, not quick and jerky, especially while passing our hands over an open hive. Shaking bees off the combs, during extracting season, will soon show an observer how much less danger there is from bees on the wing, than from the chaps who are around on the frames hissing, buzzing and ducking their heads this way and that, ready to jump if they can see something to jump at. If any one is curious on this subject, let him try the experiment, first with Italians, then with blacks, of brushing bees off their combs without first shaking off most of the old bees, and I think Mr. Heddon's theory will be very thoroughly disproven.

Hawkes Park, Fla.

For the American Apiculturist.

HYBRIDS vs. PURE ITALIANS.

ABBOTT L. SWINSON.

Friend A. L. Taylor, of Lapeer, Mich., has an article in the December number of the "Api," "Italians vs. Hybrids," in which he points out the superiority of "hybrids" over Italian bees. Well, first, here is where his experience and mine widely differ. The very point that he makes for his German hybrid bees against the Italians are those most applicable to the *pure* Italians for this locality. I notice that most all our northern beekeepers, in recording their experience in the trial of this and that, is exactly the opposite of the same experiment tried here in the south, and I have often noticed this from our *best* writers, those best posted in apicultural knowledge and *practical* apiarists. Consequently, when I see anything so very different in its nature from the same practical results as obtained here at the south, I can but conclude it is due to the difference in our climate. The conclusion is thus forced upon me that such rules and conditions, as are applicable to beekeeping in the north and west, will but poorly apply to the southern beekeeping. This one fact should be kept in view always, when a southern beekeeper is reading after a northern or western apiarist and *vice versa*, especially when he reads that which is so contrary to his own observation on the same points. That Mr. Taylor's observations between Italians and hybrids for Michigan is correct, I must think, because I have every reason which he could give, and my knowledge of the man leads me to that conclusion. And further, I know that he has

for the past two years purchased of me what hybrid queens I happened to have on hand in the spring, though he has never been the man to order an Italian queen of me. As to the relative points of value between bees here in the south: there never has been any bee that is superior to the American (Albino?) Italians. Yes, *American*. Why not *American* Italians? Certainly there is a great improvement made in the markings of the queens, drones and workers, in any strain of pure Italians that have been bred up here on our American continent for ten or twenty years to the exclusion of imported stock, that they are in no way *Italian*, except from the fact that the bee was originally from Italy? Any more so than many of the American people to-day, who all as a rule originated from some other country, but are to-day *Americans* and why would not the same rule apply to bees, friend Taylor? more especially since in every way, except their *originality* the *true American* Italian is foreign to the imported Italian stock. In this I can agree with Mr. Alley.

Take the black bees in the south, and the first thing they do is to fill up every nook and corner of brood-hive with brood and *honey* and *then* swarm, many times without so much as entering the sections. Then again they fill them one-fifth or one-fourth, sometimes less, and then swarm; the result is, all bees and no comb honey. And this disposition is most prominent in the Germans and Italians crossed as applied here. With pure Italians they *at once* enter the sections and go to work and fill them, removing in *many instances*, all the honey from the brood-chambers, except a little at *each end* of *frames*, and have brood right to the top-bar of frame. I *never* had a *hive* of *pure Italians swarm* till after the surplus department was *filled;* that is their strong point here, which is more than I can say for any other strain or race of bees, and I have kept during the past four years Cyprians, Syrians, Carniolans, Italians and Albino Italians. The same remarks that apply to Italians are applicable to golden or Albino Italians, their most striking difference being in their markings.

Goldsboro, N. C.

For the American Apiculturist.

HOW TO REAR GOOD QUEENS.

C. M. Goodspeed.

I once heard L. C. Root say that "beekeeping of to-day was a success or failure according as the apiarist had good or bad queens in each colony." Competition is so severe and prices of honey have been forced down to so low a point that beekeepers can no longer make the business profitable unless they secure full crops, and full crops are impossible without strong colonies at the opening of the harvest, and strong colonies are equally out of the question without good queens.

Bees in a normal condition rear their queens from queen eggs. What I mean by "queen eggs" is eggs that from the time they were laid were intended to produce queens. I *have* claimed that worker and queen eggs were identical, but in the light of to-day I dare not say they are. An egg laid in a queen cup or full-sized cell *always* stands perpendicular with the base of the cell, while an egg laid in a worker cell always (or nearly always) leans a little to one side. If you will carefully remove an egg laid in a queen cell and place it side by side with a worker egg from the same

queen you will find a difference in size in favor of the egg laid for a queen.

I wonder how many of our queen breeders have tried to raise a worker bee from an egg laid in a queen cell. I don't believe a genuine worker bee can be raised from such an egg, and *vice versa*, I don't believe that the best queens can be raised from worker eggs. We should aim so far as possible to stock our yards with queens reared under the swarming, or the superseding impulse, if we may be allowed the expression. Who ever knew a superseding queen to be a poor one?

My experience would further go to show that queens reared from very young or very old mothers were not so vigorous, as a rule, as those bred from a two-year old queen mother.

So much for the egg and with the editor's permission we will speak of the after treatment in another article.

Thorn Hill, N. Y.

For the American Apiculturist.

"WHAT IS IT?"

WILL M. KELLOGG.

By my own mistake or poor writing or mistake of "typo," in Feb. "Api," page 31, I was made to say that "honey dew" came in the latter part of Aug. and fore part of Sept. I never knew of any honey dew in Sept., and the reading of my article shows that we get it in July, first, after dry weather has stopped the flow from white clover. I see that the editor and others are calling the "what is it" a true honey from a shrub. That won't apply here, for we have an open, level, prairie country and no such flowering shrub grows here. This is the first season that we ever got any of it here, but it is common in the apiaries along the river where I kept bees for four years.

Oneida, Ill.

[Printers follow copy. We can correct manuscript in some respects, but when a writer says Sept. and means August we cannot say which is correct. We respectfully request all our correspondents to be more careful with their copy.]

For the American Apiculturist.

APICULTURE IN CALIFORNIA.

A. NORTON.

(Continued from page 31.)

HIVES.

I believe that the most extensive producer of extracted honey in America and, possibly in the world, is or has been Mr. R. Wilkin of San Buenaventura, Cal., another apiarist of long and thorough practice. He not only uses and prefers the regular Langstroth, but has experimented somewhat with the closed-end Quinby before settling his preference. Mr. W. has run as many as 1,200 to 1,500 colonies at a time and has produced 50 tons of extracted honey in a season. I have never seen a discussion of the merits of the hives (L. and Q.) as compared with each other. If such a discussion could be had free from the animosities and personalities that I have seen in other journals over the size and shape of frames, I should like to see it carried on in the "Api." Each of us can not practise with every kind of hives, but we can profit from the experience of those who have used each his kind.

I have been much interested of late by accounts of three styles of invertible hives of recent invention. Two of these are patented and one is is not.

As they have not yet been used in California, they may not be appropriate to the main topic of this article; but brief mention of them is not wholly foreign to the subject of hives.

I have not seen any of them. My

judgment of them is wholly theoretical—save so far as based on general experience with other hives. But if such objections occur to any of us and they concern points not yet covered in descriptive articles, we can draw forth explanations only by making our misgivings known. Two of these hives have closed-end frames.

Unless experience proves my fancy wrong, they would not gain popularity here. The removal and replacement of frames must involve a small amount of friction that would amount to some degree of hindrance. The turning of thumbscrews, necessary in both, is another item which in large apiaries must be appreciable when extracting. In one of these hives the divided chambers and frames render it necessary to handle twice the number of frames to extract the same amount of honey. As with the Quimby hive, the bringing of frames together when closing the hive must cause delay or needless destruction of bees; and the standing of frames in the super upon those in the brood-chamber must have a like result when replaced after the operator having shaken the bees down into the hive in extracting. It may occur that you suspect foul brood without detecting it. You will not want to exchange frames from hive to hive. You will, therefore, need to extract from each colony, leaving the super empty and safely closed till you return and replace the same combs you had taken out. Unless these hives have outer cases (which are expensive and otherwise needless in this country) they can not thus be closed without frames. One of the hives alluded to has hanging frames suspended in the middle, with ordinary end-bars that admit of lateral movement. While this hive might be handled more rapidly than the closed-end hives in some respects, yet the replacing the one-half case every time the hive is opened must be an inconvenience and a source of slaughter for innocent bees. I hope next season to give two of the hives, the Shuck and the Alley, a trial.

And, if such were permissible in your columns, I would like to see reports from parties who have already used any of these styles and also articles from the inventors. This subject, though old, is ever new, and friendly discussion leads to solution and decision.

With beekeepers in this state, considerations as to size and shape of frames and hives are based upon convenience and amount of surplus without need of regard for wintering. In earlier days, very little uniformity prevailed; but, at present, many odd sizes have been discarded. The Harbison is a tall hive, but the brood-chamber portion is nearly cubical. In Los Angeles county I believe there is quite a tendency toward the Adair size of the Langstroth—eight to ten frames $11\frac{1}{4}$ deep by $13\frac{3}{8}$. At a meeting of the Ventura county association some years ago, a majority agreed to secure uniformity by adopting the standard Langstroth. This size now prevails quite generally in that county. Mr. Langstroth could scarcely witness a more gratifying testimony to the merits of his invention than by visiting, in Ventura county, the many metropolitan cities of bees whose domiciles perpetuate his name. And the effect might be still heightened, after looking at an apiary, such as that of Mr. Wilkin, when he went to the odds and ends pile and saw the various styles that had been used and cast aside. In conclusion, let me repeat that I do not deliberately attack any hive, but that I criticise what to me seem to be drawbacks. If the "Api" were to have a series of articles from men like L. C. Root, A. I. Root Bingham, Shuck, Heddon, Demaree, etc., each giving his experience with the hive he is identified with, and explaining how in using it he avoids the objections most likely to be

met with as well as stating what other well-known style he has ever tried and cast aside and why he discarded it, I, for one, should feel more like preserving them, than most any other series that could be written. If order is ever to be brought out of chaos, and uniformity replace hopeless variety, what other course could be more conducive to this result?

Gonzales, Cal.

[The columns of the "APICULTURIST" are open and free to all who desire to discuss any question pertaining to bee culture. We will remind Mr. Norton that a perfect hive has not as yet been invented. We must not expect to have every desirable point combined in one hive. Let us adopt those styles of hives (there are a number of good ones) that combine the largest number of good points and the least undesirable ones. We are using quite a number of the B. S. reversible hives and remove the combs and replace them more quickly than we can the standard frames; neither do we crush any bees. The frames can in any hive be handled so as to crush a large number of bees, but with little care and patience there is no need of killing any when removing frames.]

ITALIANIZING.

North Auburn, Nebraska.
Jan. 7. 1887.

EDITOR AM. "API."

I would like your advice in detail as to how to proceed to Italianize about twenty colonies of bees from a colony of Italians; also your opinion as to the advisability of (nearly) a novice in the business attempting the undertaking.

Any suggestions or instructions in connection with the above (through your journal or otherwise) will be gratefully received.

Respectfully,

N. P. MEADER.

ANSWERS BY P. R. RUSSELL.

Your correspondent N. P. Meader wishes to know about Italianizing black bees, etc. Let him proceed as follows: when his Italian colony begins to get strong in the spring and has plenty of drone-brood, supply them with an empty comb of worker-cells of the previous season's make.

On the third day, or as soon as plenty of eggs have been placed therein, remove the comb and cut it up into strips about an inch wide. An empty frame should be provided having two extra bars equidistant between top and bottom-bars. Now glue the strips of comb to the three upper bars in such a position that the cells containing eggs will open downwards. Next fit up an empty hive with foundation, or combs without brood and place the prepared frame of eggs in the centre. Remove a strong stand of black bees to one side and place the new hive in its stead. Now search for and remove the queen and then brush all the bees from the combs down in front of the new hive. These brood-combs should then be given to other colonies needing them. Now you have got a strong colony of bees without brood of any kind, except the prepared frame.

It would be well on about the fifth day to examine and remove all cells except fifteen or twenty of the best located ones. On the twelfth day these queen cells may all be cut out excepting one, which should be left to hatch. Now examine and remove as many black queens as you have cells; also, all queen cells that are capped and supply each now queenless colony with a cell. I think it less trouble to give the cells direct to the colonies than to undertake to hatch them in nuclei.

On the sixteenth day from the time the eggs were laid, the young queens may be expected to hatch, and this may be known by looking at the cell. If it is found open at the small end everything is well, and I would not take trouble to hunt up the young queens, for very likely you could not find them at all. These young queens will become fertilized between the sixth and fourteenth day after hatching and we want them to meet Italian drones if possible. To this end I would confine all the black drones

in their hives (during the eight days the young queens are flying) with drone-guards.

It is true the drones and queens originating from the same Italian queen are akin, but no harm will result in this case, and it is "Hobson's choice" any way, and besides it is impossible for a drone and queen to be nearer than half brother and sister, because the poor drones never had any father. If everything is all right we may expect to find eggs on the fourteenth day from hatching, but should none be found by the twentieth day we had better give them another ripe queen cell.

Now, unless we are shrewd, we shall find it well nigh impossible to hunt up and kill the twenty black queens (or even one for that matter), and I would suggest the following plan: place an empty comb or a full sheet of foundation in each colony. In from three to five days open carefully and remove said comb, and we may expect to find the queen upon it: if not, repeat the operation next day.

The queen cells should be handled carefully and guarded from the bees with a wire cloth shield as follows: Cut a circular piece about four inches in diameter and mould it over the end of the forefinger into a cone large enough to contain a cell. Pierce the apex with a lead pencil for the queen to escape from, place therein the cell and plug up the large end so the bees cannot get access to the cell except at the small end. Place the cell thus prepared where the bees can cover it freely and all will be well. Otherwise many of the cells will be destroyed and cause much vexation. Of course, more or less of these young queens will "turn up missing," or be mismated. In either case we must supply cells again as before. These remarks apply to movable comb-hives.

Lynn, Mass.

ALL WORKER COMB, SWARMING, AND COMB HONEY.

Willimantic, Conn., Jan. 2, 1887.

EDITOR AMERICAN APICULTURIST:

In your last issue of the "Api" I saw a letter from Mr. G. M. Doolittle who says "when swarming time arrives I simply exchange the brood in the hive from which the swarm issues for empty frames or frames of foundation (generally the former; the plan is known as the Hutchinson plan although it originated with me) while the swarm is in the air and hive them on the returning plan." What I would like to know is, what does Mr. Doolittle do with the parent stock; also what is done with the new swarm?

I am not at all acquainted with what is called the "Hutchinson plan." I have often read of it.

Yours truly,

A. T. TROWBRIDGE.

ANSWERS BY G. M. DOOLITTLE.

Replying to Mr. Trowbridge, perhaps I cannot do better than to go over the past a little and tell how I was led along to the methods I now employ, so that he and other readers of the APICULTURIST may understand what is known as the Hutchinson plan of working for comb honey. As early as the year 1871, I began to disagree with the apicultural authorities that 2,000 or more cubic inches was the proper size for a brood-chamber, and especially so or a new swarm, for in nearly all cases I found that in the fall the bees would have from fifteen to twenty pounds of choice honey, more than they needed for winter, which honey required one-fourth the room in the hive to hold it. While the comb was being built for this, and the honey stands in it, the bees would not go into the sections of all, so that beside being in an unsalable shape this honey was a positive damage to me by way of keeping the bees out of the boxes. If we are to secure a good yield of section honey, the bees must go into the boxes at the commencement of the honey flow, and this early storing in the hive kept them from so doing; while, later on, the incli-

nation for working in sections became less and less, so that the result was a crowding of the brood-chamber with honey, which gave few bees for winter and very little honey in a marketable shape. Beside this, much of the comb built to store this extra honey in was of the drone size, which was the worst of all, for the next year it would be filled with drone-brood which cost much of my crop of honey. In 1872, I brought the size of my hive down by means of division-boards from 2,000 cubic inches to 1,500 and in advocating this size as best was opposed by nearly all of the the bee fraternity. Before the next season had passed I saw that even this 1,500 cubic inches was too large for new swarms if I would get the most profit from them; for in spite of all I could do, they would build comb in advance of the queen on either side of the brood, storing it with honey and afterwards with drone-brood. Being determined to have things as I wanted them, the next year (1873) when hiving swarms, I inserted a division-board in the centre of the hive putting five empty frames, except starters, on either side of it. The swarm was now hived in this hive and left for forty-eight hours, during which time the bees had established a brood-nest on one side or other of the division-board. I now took all the frames out of the other side and took the sections off the old colony and put them over the swarm. This caused the bees to build all their store comb in the sections and fill it with honey, while in the brood-nest nearly every square inch built was worker, and filled with brood. In this way I got all the early choice honey in the sections, together with all the drone comb. As a rule it would take about ten days for the bees to fill the five empty frames with comb, at which time they would begin to cluster over behind the division-boards thus telling me when they needed attention. I now removed the division-board, shoved the frames of brood outward and put three or four frames full of all worker comb in the centre, which comb the queen would fill with brood before any of that in the newly built comb would hatch. In this way I got a hive full of worker comb and the honey in the sections just as I wanted it. About this time comb foundation made its appearance, and, after repeated trials with it, I was finally convinced that the use of it was the same as a dead loss to me, for by the above plan I got more honey in the sections when the bees built five frames full of comb than I did if said frames were filled with foundation. I now threw my weight against foundation, calling it an "expensive luxury" when used in the brood-chamber, which brought down a shower of anathemas upon my head by those who vended the same. Next, I began using a queen-excluding honey-board in which case the sections were at once transferred from the old colony to the new swarm. Upon hiving the same, as in this case, it was not necessary to wait forty-eight hours for the bees to establish a brood-nest, for the queen was now compelled to store below as she could not go up into the sections. About this time Bro. Hutchinson began championing the use of empty frames in the brood-chamber instead of frame filled with foundation, cutting the brood-chamber down to one-half size for new swarms, etc., etc., all of which is known as the Hutchinson plan.

Having explained in the above how I came to use the above plan, and why, I will now tell Mr. T. just how I work. First, I clip the wings of all my old queens, but this is not positively necessary. Next, we want a light box the same

size as the brood-chamber of our hives. In this box I place five empty frames each having a starter of foundation three-quarters of an inch wide on the under side of the top bar, and two dummies which took the place of two combs each. When a prime swarm issues, take the box to the hive from which the swarm came, setting the frame and dummies out of the box near the hive. Now catch the queen which will be found running around in front of the hive and put her in a wire-cloth cage, laying the same near the entrance of the hive, when the cover is lifted and the surplus arrangement is taken off. After this, take out the frames of brood, putting them in the box. If the combs of brood still seem to be well covered with bees, and the weather is warm, shake a part of them off in front of the hive before putting the combs in the box. If few bees or cool weather, put all in the box, setting the box in the shade a rod or so from the hive. Next, put in one dummy at the side of the hive, then the frames and the other dummy; after which, the surplus arrangement is to be re-adjusted and the cover put on, by which time the swarm will return if the queen has a clipped wing. If not they are to be put back in this hive. Now take the box, with the combs of bees and brood, to an empty hive, placed where you wish a colony to stand and cover all up snugly with a quilt. About four o'clock the next day, take a virgin queen and keep her from food for five or ten minutes when you are to take her to this hive, having all there is left of the parent stock, and carefully lift a frame from it. As there are but few bees here, some young ones, they will not be revengeful, but at once go to filling themselves with honey, when you are to let the virgin queen on the comb by holding the mouth of the cage to some unsealed honey. She will at once go to eating, the same as all the other bees are doing, when the frame is lowered into the hive and the hive closed. The next day all queen cells will be destroyed and in a week this queen be laying, when the surplus arrangement is to be put on this hive. All after-swarming is in this way prevented, and in short I have never used anything about the swarming of bees and the getting of comb honey which worked so perfectly and pleased me so well as this.

Borodino, N. Y.

For the American Apiculturist.

A SATISFYING ANSWER.

A. P. Fletcher.

In the "Api" for January, the question "Why do bees swarm?" is more fully answered than I have ever seen it before; but I was comparatively satisfied before, so you see ignorance is sometimes satisfying, in one sense. So, also, with the question, "Who invented the movable-frame hive?" I have been satisfied with the answer — L. L. Langstroth—am now. But the King Brothers, Kidder, etc., say he was not, but have, as yet, failed to inform me who was, *i. e.*, of the movable-frame in its present state of perfection and practicability. If Mr. L. was not the inventor, will some of the readers of the "Api" answer, for my satisfaction, who was? A. J. King says Mr. L. claims only the *space* around the frame, etc., but the curiosity to my dull mind is — how could he invent the space without first making the *box* and the *frame?* The Irishman said "they took a big hole and run brass all around it to make a cannon;" but where did they get the hole? Query.

Windsor, Vt.

For the American Apiculturist.

A COLD WINTER.

C. W. DAYTON.

My Fahr. thermometer that has hung on the outside of the house in the shade for five or six years past indicated as the coldest temperature reached in the winter of 1880–1, 34° below zero, 1881–2, 34° below, 1882–3. 36° below, 1883–4, 33½° below, 1884 and 5, 36° below, 1885–6, 37° below, 1886–7 up to and on Jan. 8, 48° below. In Dec., 1886, it reaches 37° below. I am certain of the foregoing temperatures being the coldest except in 1883 when some reported it down to 40° below.

Bradford, O.

For the American Apiculturist.

THE HANDY BOOK RIGHT AFTER ALL.

C. C. MILLER.

Marengo, Ill.

FRIEND ALLEY: From what you say I suspect that if I had not been too lazy or too self conceited to follow *all* your instructions I might have found no need to change your plan of destroying alternate cells. But that's too often the way; in following out a plan given by some one else, we change something that looks like a little thing to us, but which at the same time is essential, and then when we fail put the blame where it does not belong.

Mulbery, Mo.

MR. ALLEY:

I thought I would write a few lines. Our bees had a good flight Jan. 19. There is no snow here. My honey took the premium at the fair last fall. Father has about 550 acres of land, and last fall 25 acres of apple trees were set out. We have 15 acres of bearing apple trees. The apple crop was light last season.

Please send me a sample copy of the "American Apiculturist." Saw your advertisement in "Am. Bee Journal."

PAUL M. FRANCIS, age 14.

QUERIES

and Answers by Practical Apiarists.

ORIGINATION OF THE BLACK AND THE BROWN GERMAN BEES.

Query No. 11. I read often of the black bee and the brown German bee; what is the difference between the same if any, and the origin of both? If the above question can be answered at all, data must be given in support of the answer, else I shall be as much in the dark as now. C. B.

ANSWERS BY DR. TINKER.

There is no difference between the common black bees and the so-called brown German. Slight difference in markings and development of colonies is observable in all the races of bees. There is said to be a small black bee, a grey bee and the large brown German; but they each seem to have only a distinction without a difference, since all have had a common origin and all the black bees in this country came from a few stocks brought over from England by the fathers in the seventeenth century, the first being brought in the Mayflower in 1620. They were English black bees whose presumed origin on the continent of Europe in a very remote period is involved in as great a mystery as the origin of man himself. The term "German" as applied to black bees is based wholly on a presumption that the race of black bees originated in Germany, which may or may not have been the fact. A more appropriate name would be "English brown bees."

ANSWERS BY C. W. DAYTON.

The German bees first came from Germany; and, like the Italians in their native country, some are brown and others are so dark brown as to be nearly black. Some persons have darker complexions than others, not because they are

of a different race but because it is "nature."

There are brown bees in this country that are not Germans; perhaps they came here when the Indians came. They are natives of this country as the Italians are natives of Italy, or Syrians of Syria. The Indians are, or are called, natives of America, the African of Africa and Asiatic of Asia. These natives are divided and subdivided into different strains each speaking its language and dialect and possess peculiarities differing from each other.

The inhabitants of the earth appear divided into breeds as the United States is divided into states, counties, townships and districts.

When we go back to the Bible (our only authority), we understand that there was but one man created. The different climates and natural surroundings seem to play an active part in changing the characteristics. If there was but one colony of bees created at first, then the different strains existing at present must have originated from the one, and shows that the strains may by separation and climatic effects become established races.

ANSWER BY G. M. DOOLITTLE.

Can see no difference at all. About the origin of these bees I know nothing.

ANSWER BY JAMES HEDDON.

Different persons mean different things by the term "black bee," and perhaps by the term "brown German bee." When I say "German bee" I cover the whole ground of the smaller black and larger brown or gray type or strain of the German race. In a late issue, I told whence I procured my first specimens of the larger, lighter-colored type of the German bees and how much better I found them than the more common, smaller and darker strains of the same race. I am not sure of the origin of variation in the same race. I suspect that isolation in different and more or less favorable localities brought about the difference. I only know of their present vast difference in quality.

I found this difference far more striking than difference in qualities among Italian bees, and a few years ago Mr. Dadant imported some longer-bodied and darker Italians than I had ever seen before, and I found them superior to any I had ever tested.

CROSSING THE RACE TO PRODUCE A NEW STRAIN OF BEES.

Query No. 12. Is it possible to create a new strain of the honey bee, by crossing? What I mean is a strain that will be able so to duplicate itself, that by any markings of color it can be positively known and distinguished at all times, and under all circumstances. K. R.

ANSWER BY DR. TINKER.

Yes, it is possible in the space of perhaps a dozen years. But it cannot be done by natural selection in one man's life-time. Queens and drones must be selected to a type and mated in isolated localities. It is easier to get queens to duplicate themselves than to get queens that will produce a uniform drone progeny.

ANSWER BY G. W. DEMAREE.

This is a nice question, and one that has engaged the attention of a great number of breeders. The question as to what is "possible" in the science of breeding opens a wide field for investigation and experiment. It is certain, however, that no one has yet succeeded in breeding a strain of bees from a cross between any of the so-called races of bees that have characteristic markings sufficiently established to identify them or distinguish them from other hybrids

As to possibilities, I am quite certain that I could move some colonies of hybrids to some isolated place, out of the reach of other bees, and by making close selection to develop any peculiarity I might see, as an outcropping in the process of breeding, in way of peculiar markings, color of plumage or general color, and by persistent in-and-in breeding, succeed in establishing a strain of hybrids that could be known from other hybrids, but likely they would not be of much service when it was done. It is a well-established fact that when it comes to working quality in bees, as pertains to hybrids, the first crosses give the best bees, and this warns us against any attempts to establish strains of hybrids.

Very many good beekeepers prefer hybrids for honey gatherers. This is very natural, because of the persistent labor and care necessary to rear and preserve any pure race of bees in this country, where different varieties of bees are so common. In a practical way, the reader is now prepared to see that I would answer the query in the negative.

ANSWER BY J. E. POND.

It is utterly impossible so to do, in the present state of our knowledge of breeding rules and our power of selection, both of males and of females in cohabitation. It has often been said, and with apparent correctness at first thought, that so many generations of bees can be raised in a single season, that it is easier to produce a strain by cross-mating, than in our work in the same direction, as horses, cattle or sheep. This is incorrect, however, in practice, the fact being that we can not control the drones at all, while with our farm stock we can select both parents with certainty, and so secure the best individual specimens to be found. Till we can do this with our bees, no positive and absolute duplication can be warranted.

ANSWER BY C. W. DAYTON.

It might be possible to produce such a strain but the producer would be likely to work for nothing.

TIERING-UP.

Query No. 13. What is the difference, if any, between the tiering-up of hives from four to five inches high, and those that are from ten to twelve?

W. F.

ANSWER BY DR. TINKER.

There is considerable difference in the amount of labor. But the querist probably has reference to the work of the queens and bees. The queen will lay as many eggs in a shallow sectional hive as in a deep frame sectional hive of equal space and equal condition, but the queen is not apt to lay as many eggs in the latter part of the season in the former as in the latter. Bee-spaces between brood cases are no hindrance to the queen going above or below in extending the brood in building up colonies in the spring. All that is needed are a force of bees and the necessary food in plentiful amount near at hand. With these conditions bees will build up fast in any kind of a hive of sufficient space. A question more difficult for one to answer has been. Will the queen extend her work upward into empty cases of combs more readily than downwards into the same? So far, I have been able to perceive no difference. The spacing of the combs from centre to centre has more to do with the rapid extension of brood than the shape of the combs. Combs spaced $1\frac{3}{8}$ inches from centre to centre, or slightly less, enable the queen and

bees to extend the brood at least ⅓ faster than where the combs are spaced 1½ inches from centre to centre, other conditions being the same.

ANSWER BY C. W. DAYTON.

The difference is in their construction and labor of manipulation and is equal to about ⅓. In using extracting stories 5½ inches high there should be from two to six for every colony. If the stories are eleven inches high, from one to three stories; twice as many hives and frames and a little more lumber for their construction. The large combs contain seven pounds and the small ones three; and the honey can be removed from the large comb almost as quickly as from the smaller ones.

The advantage of the small shallow stories is that there will be combs of capped honey soonest when used on the L hive. If we use two shallow stories and one deep story there will be the same capacity. Where the honey in the large story is half capped the upper one of the shallow stories is all capped and the extractor is used. By the time the large story is capped it is time for the extraction of the other small story. This renders two manipulations in the place of one and does not improve the quality of the honey. The time is near for the production of honey at minimum labor and cost; and if we get as much honey in single combs as possible, and at the same time ripen the honey, we are taking one advantage.

ANSWER BY G.M. DOOLITTLE.

Can see no difference except that the latter would require a large number of tiers.

ANSWER BY JAMES HEDDON.

The systems and their results are altogether different in tiering up two or more brood-chambers or practising tiering or interchanging system of one brood-chamber made in two horizontal sections for purposes of contraction, etc., etc. The first is very old, the second new, and productive of new results.

ANSWER BY A. E. MANUM.

I hardly understand the question; should say, however, that all the difference between the two hives would be in the difference in the distance the bees would have to travel.

ANSWER BY J. E. POND.

I do not see any difference at all. A hive is a hive, no matter what its depth. If there is any difference, it can simply exist in the difference in height between six of the shallow, and six of the deeper when tiered up side by side.

ANSWER BY G. W. DEMAREE.

There is no difference in the world, either in action or discovery. The old words to "tier up, tiering up," mean all that the newer phrases "double, horizontal, sectional, etc.," can be made to mean. The mere depth of the sectional parts of the hive cannot alter the facts. Since the year 1879 I have "tiered up" hives in sectional parts from five inches to ten inches deep.

VENTILATING HIVES.

Query No. 14. 1. Is it advisable to bore holes in hives to ensure good ventilation?

Please give your method, or methods, of ventilating hives.

2. Please give a description of the Carniolans. Are they desirable bees? Give their *good* and *bad* qualities.

3. How can I prevent swarming? (My hives are the Langstroth-Simplicity.)

4. Is there any better hive than the "Langstroth Simplicity?" W. M. B.

ANSWERS BY DR. TINKER.

1. No; I ventilate my hives by giving a large entrance and in very hot weather raise the cover a little at one end.

2. The Carniolans are hardly distinguishable from our common black bees. The queens and drones are smaller than the blacks and the race is no doubt a cross between the blacks and Cyprians originally, the blacks predominating in color. They are excessive breeders of both workers and drones, long-lived and hardy but not quite as good workers as Italians. They make beautiful combs and would be desirable as comb-honey producers. I think that the common blacks would be greatly improved by crossing with them. Crosses with other bees I do think would be desirable.

3. Swarming cannot be prevented in working for comb honey, nor is it desirable in all cases.

4. Yes, I believe that the "Bay State" hive is a better one; there are also others.

ANSWERS BY A. E. MANUM.

1. What style hive do you use, and what season do you wish to ventilate? Please be more explicit with your questions.

I never ventilate hives in summer. For my methods of ventilation in winter, see my article in Oct. "Api."

2. I have never had the Carniolans, hence cannot answer.

3. There are many ways to prevent swarming, but none of them are practical in large apiaries. To give a detailed description of each method would require too long an article at this time.

4. Yes, the Bristol hive I consider far better than the Simplicity.

ANSWERS BY J. E. POND.

1. I have never considered it necessary to bore holes in hives to ensure ventilation. I bore holes, however, in the covers to allow moisture to pass off. I do not know that this even is necessary, but I have adopted it as a simple and easy method. As to the advisability of the matter, it depends upon the construction of the hive; some means of ventilation is advisable, and if no other is as easily arranged, the boring of holes is advisable.

2. I have never tested the Carniolans, so know nothing about them personally.

3. I don't know; I have tried every plan I have seen advised, but all fail so far.

4. I consider the Langstroth Simplicity the best hive in use; others differ from me. It is fair to say that the best hive ordinarily is the one a person is accustomed to using. A frame hive of some kind is a necessity. All hanging frames are Langstroth, no matter what their shape. A Simplicity hive is simply one that can be tiered up, or interchanged, with any other, both bodies, covers and bottom boards. When I say I consider the "L" hive the best, I mean the regular size as made by A. I. Root, for frames $17\frac{3}{8} + 9\frac{1}{8}$. In matters of opinion as the answers to this question must necessarily be, nothing can be given save the view of each individual who answers, and nothing positive can be deduced therefrom.

ANSWERS BY R. L. TAYLOR.

1. In summer with proper shade, an entrance, the full width of the hive, is sufficient. In extreme warm weather, if the hive is not shaded, put a sliver between the hive and the cover, so as to permit a circulation through the hive. In wintering outdoors, I give an entrance the full width of the hive, and in the cellar take of the bottom-board altogether.

2. I cannot answer.

3. The only way to prevent swarms from full colonies that I know of is to give plenty of room and extract closely and that fails sometimes.

4. Yes, decidedly. By removing the bevelled top edges, it would do well enough for the production of extracted honey. It is too large

for the production of comb honey, and otherwise any hive that will accommodate section cases of the same length and width of the hive, outside measurements, is immeasurably better.

ANSWERS BY C. W. DAYTON.

1. It might be advisable with box-hives, but I usually turn frame-hives bottom upward and then cover them with quilts or chaff cushions. To ventilate frame-hives at the top, put the thickness of a nail under the edge of the honey-boards or remove everything and cover with quilts, or thin chaff cushions. When I talk about ventilating hives I always suppose the reader knows enough to adjust the temperature. A temperature of 36° I consider a regular bee killer with or without ventilation. With that temperature we would not want much ventilation. If the temperature is 40° give ventilation through 3 in. of loose chaff; 45°, 2 in. of chaff; 45 to 50°, leave the brood chamber entirely uncovered, in the case of strong colonies; but 2-frame nuclei will need some chaff or quilts even in that temperature. At 60° to 65°, the nuclei may be left suspended in mid-air "as it were."

The colder the temperature is, the more clothing we want on our beds in winter. It is the same with a colony of bees, but a large colony can endure more cold than a small one. No matter how porous our covering is, if there is enough of it we sleep warm, though there is a continued circulation upward through the blankets.

This circulation carries the moist perspiration away from our bodies and we remain dry and warm. If we introduce an oil cloth between the blankets the perspiration will accumulate beneath it making conditions damp and cold. This should show the kind of circulation and ventilation to apply to a colony of bees to keep them warm and dry. If the temperature is 20° below, it would want one foot of chaff, and 50° above would not want any covering at all. They would not be cold and uneasy but just comfortable; nothing to worry or fret about them. I find upward ventilation through building paper or thin boards, providing they are not gilded with propolis, to be sufficient in some temperatures. Dr. Tinker thinks his bees get some ventilation through his thin basswood boards and also says that his cellar used to be rather cold. I never was able to adjust the cover to the hive close enough to prevent all ventilation except by lining the edges of inch boards with rubber or cloth and nail them solid to the hive. In such a case the moisture on the inside of the hive will swell the boards and burst them open. Slight ventilation works the moisture out of the hive. If there is no ventilation but the entrance, and the temperature is high, the warmth of the bees will fill the hive and expel the moisture through the entrance; but it takes a very strong colony in a very small hive to cause such a circulation as that in a temperature of 45°.

2. I never have seen a Carniolan bee.

3. Use "queen restrictors" or invert the brood-combs every five days. Adjust the surplus receptacles in season (before queen cells are prepared) and keep the bees busy filling vacant space near the centre of the hives. Destroy all queen cells as soon as they are started and give plenty of room; this is the only effective remedy known, and it can be practised to excess.

4. I think the hive used by G. M. Doolittle is better and simpler than the Simplicity; but I have no doubt but that the Simplicity

is a better hive for A. I. Root than the hive Mr. Doolittle uses.

There are many men and as many minds on the best hives. There are but few poor hives in the hands of successful apiarists.

ANSWERS BY G. M. DOOLITTLE.

1. No. Ventilate by enlarging or contracting the entrance.

2. Consider them only a peaceable strain of the black bee.

3. Prefer swarming to non-swarming.

4. I think so. I use the Gallup frame.

FINDING A QUEEN. INTRODUCING A QUEEN AT SWARMING TIME. SAVING CELLS FROM A COLONY THAT HAS SWARMED.

Query No. 15. 1. How can a full stock be induced to find a queen for you?

2. Just after a swarm has departed will the bees accept a queen run in at the entrance?

3. Can a beginner wanting to raise a few queens do better than to raise them from his best mothers by swarming impulse? C. H. B.

ANSWERS BY R. C. TAYLOR.

1. Cover the entrance of the hive with a piece of perforated zinc and shake the bees from the combs in front of the hive. The workers will enter the hive, while the queen will be excluded by the zinc.

2. They will generally accept a virgin queen.

3. No.

ANSWERS BY G. M. DOOLITTLE.

1. I generally find the queen myself.

2. Not often in my yard.

3. No.

ANSWERS BY A. E. MANUM.

1. By shaking all the bees out on a woollen blanket spread over a shallow box (say the cap to an L. hive), then *wait* and *watch*.

2. Yes, if a virgin queen; and sometimes they will accept a fertile queen, though not always.

3. No, if you have good stock, rear your own queens.

ANSWERS BY DR. TINKER.

1. The bees upon opening a hive of shallow brood-cases will often be seen to be agitated in the vicinity of the queen so that she is easily found. I have thought the queen gave a note of warning that caused it.

2. Yes, as a rule, but they will often prevent the queen from tearing down any cells, the result being a swarm upon the piping of the queen first to mature.

3. A beginner had better rear all queens in swarming time if his best queens lead out swarms. But with a good book on queen-rearing any one can rear good queens at any time in season.

ANSWERS BY C. W. DAYTON.

1. It cannot be done except as the eye of an experienced apiarist can observe the bees paying particular attention in the direction where the queen is situated. The bees may be observed to act much like a flock of sheep following their master. Their movements are often misleading and can be produced only under certain and perhaps impractical manipulations.

2. Sometimes that method is successful and often unsuccessful, I have found it best to introduce with cages under nearly all circumstances, and then let the queen out when she does not know it. It appears sometimes as though it was the conduct of the queen that caused trouble, other times it was the bees.

Some years it seems easy to introduce queens in almost any way we please and again it is just as impossible.

3. Not usually; but if he cannot raise them by the swarming impulse handily he can raise them just as well and often better by the method in the Handy Book. It is not always the most profitable to have colonies swarm in the honey harvest. Artificial methods are advantageous in rearing queens earlier or later than the swarming season. The beginner must advance and learn which is his favorite method.

Bradford, Iowa.

ANSWERS BY J. E. POND.

1. I don't understand the question. Is it meant what state or condition of the bees will show the locality of a queen? or is it meant how can a lost queen be discovered during swarming? Give more data to make the question intelligible.

2. Sometimes they will, and sometimes not. If honey is being gathered freely, no other queen is in the hive, and all queen cells are destroyed, they will do so in nearly every instance.

3. A beginner, *wanting* to *raise* a few queens, can perhaps do no better than to raise queens in this way. If, however, he wants a few first-class queens his better way to *obtain* them will be to purchase them from some reliable breeder; and I take pleasure that none are more reliable or furnish better queens than our good friend Alley, editor of the "Apiculturist" and proprietor of the Bay State apiary.

Harrison, Ohio.

MR. ALLEY:

Will you please answer the following query: "What is a Lightning Gluer" as used in making section-boxes for honey? Where can they be bought and what do they cost? G. A. S.

[The "Lightning Gluer" is the invention of Mr. A. E. Manum of Bristol, Vt. Address Mr. Manum and he will probably give you the desired information. We never saw one of them and cannot, of course, describe it, or say whether it is practical or not. Think, however, it must be a good thing, as Mr. Manum does not have much time to spend upon worthless tools.]

SUGAR STORES AND REVERSIBLE FRAMES.

MILBURY, MASS.

In regard to reversible brood-frames, where the bees are wintered on sugar syrup, and fed for stimulation on the same, will they not carry it up into the surplus boxes when the frames are reversed? I have a device for reversing brood-frames that is much more simple and more easily worked than any I have seen or heard of yet. Shall try it this summer, and if it works well will publish it.

WILLIS S. YEATON.

[No, the bees will not remove sugar-stores from the brood-chamber to the sections, neither do we think they will remove stores of any kind to the sections from the brood-nest.

Your device for reversing frames may work all right and be the best in use but any method for reversing frames singly is not wanted by bee-keepers, nor is it practical. What is wanted is a device for reversing all of the frames easily and quickly when there is necessity for so doing. Reversible hives and not reversible frames are what beekeepers want and demand.]

Under date of Feb. 3, 1887, Mr. A. E. Manum wrote thus: A warm day last week revealed the fact that my bees are wintering well on summer stands; all seem to be in the best of conditions—not a dead colony yet.

EDITORIAL.

Rearing Queens.—Our remarks, on page 23, Vol. V, in reference to Dr. Miller's book and his method given therein for rearing queens, have brought a most interesting article from Mr. O. O. Poppleton, in which he says that he has trouble in separating the queen cells when reared by the process given in the Handy Book. We call Mr. Poppleton's attention to the illustration on page 159, Vol. IV. If the comb containing the eggs is used curving or placed in a convex position as represented in the illustration, there will be no difficulty in separating the cells with-

out damaging any of them. If the comb is placed in position on a straight line, none of the cells can be removed without cutting into nearly all of them.

The comb may be curved very much more than is represented in the illustration. If Mr. Poppleton will take this hint, he will experience very little trouble in this line in future.

Regarding the quality of queens reared during or after the honey-flow, we can see no difference, and if a colony be well fed while it is building queen-cells there ought *not* to be any difference in the quality of queens. Those who have read the Handy Book will remember that we strongly urge liberally feeding a colony while cell-building is going on, and also the keeping up of the flow of syrup until every queen cell is capped. By this practice all of the young queens will prove first-class; but if not fed properly very few of them, say not more than two out of a dozen, will be of any value.

Regarding the matter of leaving out one of every three eggs instead of every alternate egg it may be that I did not carry my experiments as far as Mr. Poppleton and Dr. Miller have. However, the method as given in the Handy Book, that is, removing every alternate egg, is practised as much for economy as for the purpose of securing a good quality of queens.

As a general rule, we use but one queen to draw eggs from for cell building; for when a queen has been tested for rearing we find that it pays to use all of the eggs from one mother. The same is also true of the drone mother. When two such queens have been thoroughly tested for queens and drones, we consider them worth, at least, $100 apiece. If any person connected with the bee-business, and more especially the queen-rearing branch of it, appreciates the value of a good queen, we think we are the person.

A large majority of those who keep bees know very little about the correct methods of rearing queens. We wish more of our prominent beekeepers understood the matter better, as articles on the subject would be most interesting to the readers of any bee-journal. As our methods are given in full in the Handy Book, we do not feel like writing much on this question for publication in the various bee-journals—not even for the APICULTURIST.

It is pleasant to know that the methods given in our book are commended by nearly all, if not quite all, prominent beekeepers. The editor of the most prominent and influential foreign bee-journal wrote us the other day that he thought so much of the Handy Book that he had bought quite a number of them and presented them to his friends. G. T. H. Gravenhorst, a prominent beekeeper and editor of "Bienenzeitung," a bee journal printed in Germany, gave the Handy Book one of the best testimonials it has received, and we do not except those received from the "American Bee Journal," Prof. Cook, Rev. L. L. Langstroth and over one thousand others of our best known apiarists.

Our methods for rearing queens may be seen at our apiary at any time between May 10 and Aug. 25. After the latter date we "start" no queen cells. We will show the visitor long rows of queen-cells, and will separate them to prove the fact to any doubter that all cells built by our method can be separated without destroying any. We will also exhibit queens and queen-cells in the nursery, and hundreds of queens both virgin and fertile in nuclei.

Convention Reports.—Our readers will find two model reports of bee conventions in this number of the "Api." Usually such reports are very dry reading, but those by Mrs. Hills and J. H. Martin will be read with interest by all. Reports of such meetings made in the usual way are not desired by the Apiculturist. By the way, how would it do for those parties who send long notices and programs of prospective conventions to take a little further notice of us by sending a report of the doings of these meetings? Such an act would show that the APICULTURIST is not forgotten. We have given much space to convention notices, but the secretaries have forgotten to favor us with reports of the proceedings.

We cannot promise to publish such reports if sent to us. When the space can be spared and they are of the "model" kind, they may find room in the Apiculturist.

Bees Taking a Flight.—On Sunday, Jan. 23, all our colonies wintering on the summer-stand had a good flight. The day was clear, calm and warm; temperature 50° in the shade. Every colony but two reported strong in numbers and perfectly healthy. The flight

was a thorough, cleansing one, and what were white snow and white hives were more yellow than white before the bees were done flying. Such a flight under favorable circumstances is most beneficial. These colonies are now in condition to stand a confinement of at least two months. A few bees were lost on the snow, but the general good to the apiary will more than offset the few bees that perished.

Thus far the bees on the summer stand are, seemingly, wintering much better than those in the cellar, although the only difference seems to be that more bees are dying in the cellar than out of doors. We may mistake about this as all of the dead bees in the cellar can be seen, while those that die out of doors cannot.

Bees in the Cellar.—We have thirty-six colonies of bees in the cellar; they were put in nine weeks ago. To-day, I swept up about a peck of dead bees. We have not had very extensive experience in wintering bees in the cellar, and it seems to us that there ought not to be quite so many dead bees.

The temperature does not vary much from 48°, and all the colonies seem very quiet.

Will those who have had experience in such matters give us some information regarding the quantity that usually die during the winter while the colonies are confined in the cellar or bee house.

Bees on the summer stands seem in fine condition at this date, Feb. 20.

When the combs are full of honey in the fall, the bees will be found in the early part of the winter clustered near the bottom-board of the hive; towards spring, as the stores are eaten out, the bees will be found near the top of the frames. The colony must locate where they can cluster compactly, in order to preserve the proper temperature.

Perforated Metal.—We obtain the perforated zinc used in the construction of our drone and queen-traps, from Thos. G. Newman & Son, Chicago. The perforations are the most accurate, and the metal is the best we have ever used. No other zinc, except that imported from London, will do for the traps. Newman's zinc costs but two cents more per foot than some other.

Cheaper metal for honey-boards, etc., may be had of A. I. Root of Medina, Ohio, but his zinc will not do for the traps unless Mr. Root has made great improvements in its manufacture since last year.

We would say also to those who are manufacturing the traps that they should have one coat of shellac to protect the wood from the action of the weather.

"The Canadian Honey Producer" is the name of a new bee paper published in Ontario, Canada, by E. S. Gould & Co. of Brantford. One of the editors is the person who translated the old German bee papers which appeared in the back numbers of the "Apiculturist."

A good monthly published in the dominion of Canada has been needed for a long time, and the "Beekeeper" will most likely receive the support it deserves.

The subscription price is but forty cents per annum, and we feel quite sure that it "won't pay" However, that is no concern of ours. We will send "The Producer" and the APICULTURIST one year for $1.10.

Seedtime and Harvest is a very interesting magazine of thirty-two pages devoted to RURAL AFFAIRS and printed at La Plume, Pa. The subscription price is but fifty cents per annum.

Our Club List.—Please notice our club rates on another page. You will see that we have added the "British Weekly Bee Journal," also the "British Beekeepers' Guide Book," by Thos. Wm. Cowan, F.G.S., F.R.W.S. The sale of this work has reached the large number of 15,000 copies and is being translated into several languages. It is profusely illustrated, and is worthy of being placed in the library of any beekeeper.

Our Price List.—We have no price list or catalogue of any sort except what is found in the last pages of each number of the Apiculturist. Please examine every page of the "Api," as there is something of interest to all.

On page 12 occurs a mistake of the typo in Dr. Tinker's answer to Query No. 1, that alters the sense of the italicized words in the first paragraph materially. The latter part of the sentence should read: "*the markings*," not "*the workings*." Reference is had to the prepotent influence of the drone in determining the color of the worker progeny.

SPECIAL NOTICE.

E. T. Lewis & Co., Toledo, Ohio, are ready to mail their thirty-two page illustrated circular and price-list of bee-keepers' supplies. They offer for sale goods of every description used in the apiary. Their honey extractor, the manufacture of which they make a specialty, may be found in hundreds of apiaries; and as they work to perfection, and are made of the best material they give general satisfaction. Circulars free.

CIRCULARS RECEIVED.

Dr. G. L. Tinker, New Philadelphia, O. hives and fine sections.

Chas. F. Muth & Son, Cincinnati, O., general supplies.

E. T. Lewis & Co., Toledo, O., general supplies.

C. M. Goodspeed, Thorn Hill, N. Y., general supplies.

Jno. A. Thornton, Lima, Ill., queens, bees, fowls, etc.

E. L. Gould & Co., Brantford, Ont., bee-keepers' supplies.

M. H. Hunt, Bell Branch, Mich., supplies.

All who Subscribe for the APICULTURIST from January 1st will receive one of our combined drone and queen-traps free by mail. This is our method of introducing the APICULTURIST and our drone and queen-traps into every town and city in the United States.

Those who receive the trap as a premium must not expect to get the Handy Book or a queen for fifty cents, as the profits are so small that only one premium can be given each subscriber.

We do not advertise to give premiums to those who subscribe through other parties. We pay news' agents a percentage on all subscriptions sent us, and if you choose to give the agent a profit instead of sending direct to us, it is no fault of ours.

See CLUB LIST on another page.

AGENTS FOR TRAPS.

Messrs. Thos. G. Newman & Son, 925 West Madison St., Chicago, Ill., are our agents for the sale of the Drone and Queen-traps. Parties west of Chicago, as well as those residing within a radius of a few hundred miles of that city, who desire from one dozen to several dozen traps, can save something in freight and express charges by ordering of the above firm. All who can conveniently do so should order traps early, as the trade in them the coming season will be immense, and there may be some delay in filling orders later in the season.

THE OBSERVATORY HIVE.

By request of one of our readers we give below a description of an observatory hive such as we have had in use some thirty years; in fact, our first lessons in bee-culture were taken from the observatory. When I had been a beekeeper about two years I visited our county fair, and there first met Mr. Levi Fish of Danvers, a man who was well versed in the art of beekeeping. Mr. Fish had an observatory hive on exhibition, containing queen, bees and brood, which was similar in construction to the one I am about to describe.

The hive is merely a frame large enough to take one standard L. frame between two squares of glass, through which every movement of the queen may be seen, and the attention shown her by the bees as she moves about the combs; how she deposits her eggs; how the bees remove the pollen from their legs and deposit and pack it in the cells; in fact, everything that is going on in a full colony of bees may be seen in the observatory hive. Remove the queen from such a hive and the whole operation from the loss of a queen to the rearing and fertilization of a new queen may be witnessed in the course of three weeks from the time the queen is removed.

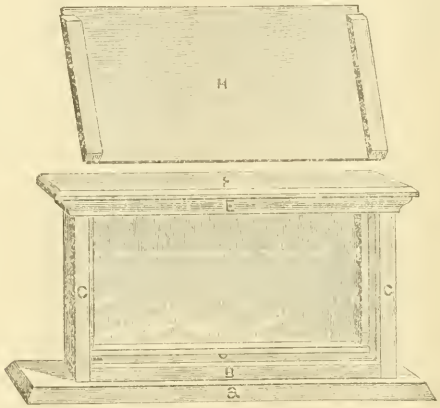
The novice can learn more of the

habits of the bee by watching and studying the working of a colony in such a hive than by any other method we know of.

The observatory hive here illustrated is made as follows: The bottom board *a* is 25 in. long, and 8 in. wide by $\frac{7}{8}$ in. thick; end pieces, *C C*, are 2 in. long, $3\frac{1}{2}$ in. wide, $\frac{7}{8}$ in. thick. Top, *F*, is $20\frac{1}{2}$ in. long, $5\frac{1}{2}$ in. wide, $\frac{1}{2}$ in. thick. The strip of wood, *E*, is a narrow piece of moulding (for fancy only) nailed to the ends flush with the top of the end pieces to keep the latter in place. The piece *B* is $18\frac{1}{2}$ in. long, $3\frac{1}{2}$ in. wide, and $\frac{7}{8}$ in. thick. This piece as well as the end pieces has a saw kerf in it $\frac{1}{4}$ inch in from the edge and $\frac{1}{4}$ in. deep for the glass to run in. The piece, *E*, at the front end has the entrance made through it at the bottom. A notch is also cut in the front end of piece, *B*, so that the bees can pass over the bottom and on to the comb. The shutters, *H*, one of which is removed and shown above the hive, are 18 inches long, $9\frac{1}{4}$ in. wide and $\frac{3}{8}$ in. thick, with clamps nailed at the ends (as shown in illustration), to keep them from warping. The inside measurement of the hive is $1\frac{7}{8}$ in. wide, that is, between the glass, 10 in. deep, and $18\frac{1}{4}$ long. This leaves a space of about $\frac{1}{4}$ in. all around the frame. Inch holes are made in the end pieces two inches from the top and covered on the inside with wire-cloth for ventilation. Places are also cut at the top, inside of the end pieces, for the frame to rest in. These should be just large enough to let the top-bar of the frame in, for if the frame fits too loosely, more or less bees will be killed. It is well to drive a nail in each side of the bottom-bar of the frame to rest against the glass so that when the hive is turned on its side the frame will be held in place.

Do not permit the sun to shine on the comb and bees over one minute at a time.

The most expensive item about this hive is the glass, and that is not very much.



OBSERVATORY HIVE.

THE UNION BEEKEEPERS' CONVENTION IN ALBANY, N. Y.

Reported for the American Apiculturist.

J. H. MARTIN.

IF any of the beekeepers who assembled at Agricultural Hall in Albany had any misgivings in re-

lation to attendance, etc., they were soon dispelled, for the large hall was well filled by a large, intelligent and enthusiastic gathering.

After settling preliminaries in relation to the three societies represented, receiving new members, etc., the convention settled down to business and took up the discussion of alsyke clover. The testimonials were abundant in favor of this plant, not only as a honey-plant, but a forage-plant of the highest value and adapted to the use of the farmer. It seems to thrive best on good soil with a tendency to moisture, while on uplands and dry knolls it gives a short growth. Its extended growth was recommended. A. I. Root, Manum and Bacon had given away seed to induce farmers to sow it and had been benefited thereby. Following closely upon the clover was an essay by Mr. Chapman, of honey-plant fame. As this plant is a new candidate for honors there could be but limited testimonials in its favor; these were from Mr. Chapman himself and from those who had seen the plant in blossom. The plant is worth at least a trial by all beekeepers who have land upon which to sow the seed. Mr. Chapman has ten acres under cultivation upon land valued at one hundred dollars per acre. It was suggested at this point that Mr. Chapman should receive the honor of being the first man to devote a number of acres to the cultivation of a honey-plant. A. I. Root, however, put in a plea that his ten acres of basswood trees were the first in *the field*.

The seeds of the plant resemble common rye and are very rich in oil. Mr. Chapman had a bottle of this oil and considered it a valuable product which would find a use and sale in the markets.

On the second day, Jan. 12, the attendance was large; several new arrivals were announced.

The discussions commenced by a very interesting address by Mrs. L. M. Thomas of Tacony, Pa. Mrs. T. is an enthusiastic beekeeper and has made a success of it, and she is, furthermore, a fluent speaker. After her address the gentlemen became very gallant. L. C. Root pathetically described how the bees would give the last drop of honey to the queen and then die, the queen being the last to die, and said we, in like manner, should give to our queens, the queens of our homes. A. I. Root, Mr. Tucker of New Jersey and others talked in the same vein, saying how much they owed to the quiet, domestic queens who were willing their husbands should receive all the honors. Brother Aspinwall wound up the discussion by reading a poem "How bees came by their sting." This was a very solemn point in the proceedings of the convention, and it was some minutes before the next subject could be discussed.

Much time was spent in the discussion of the marketing of honey, and a resolution was passed inviting middle men and grocers to take part in the discussion. Mr. Wright, an Albany commission merchant, gave many points of interest; he gave his sales as $20,000.00 worth per year. He favored unglassed sections and a 11-oz. section which could be sold for ten cents. His ideal section was $4 \times 5\frac{1}{4} \times 1\frac{1}{2}$; this, being taller than a $4\frac{1}{8}$, showed off better and would sell more readily.

An animated discussion ensued until a late hour, and so much interest was manifested that it was taken up again the next day.

Beekeepers seem to be behind every trade in devising ways to advertise and push the sale of their product.

J. H. Martin presented statistics to prove that there was not honey enough produced, within several thousand tons, to make it a staple article, and that with proper effort at county fairs and in the home market, there would not be an ounce of honey to go to the city markets.

Mr. Smith compared our exhibits at the New York state fair where there was only about twenty pounds on exhibition, to the Toronto fair where twenty tons were displayed. This very interesting discussion was finally wound up by Mr. Porter of Virginia, giving us a financial lecture on the relative value of gold and silver. Beekeepers evidently need punching up into a greater degree of enterprise on this question.

On the last day, Jan. 13, the first question for discussion was an invitation from Jas. Heddon to pitch into him in relation to his views in opposition to conventions. After an animated discussion it was unanimously decided by a rising vote that Heddon was wrong.

Separators were discussed by N. N. Betsinger. He advocated his patent wire cloth separator and tried to impress the convention that he had no axe to grind. Mr. Smith had tried the wire-cloth arrangement and found it good.

Mr. Benedict thought the expense too great to warrant beekeepers in adopting them, his figures showing $22.50 difference in the cost of wire *vs.* wood per 1,000.

There were several exhibits: H. D. Davis of Bradford, Vt., gave a large exhibit of fancy sections, hives, etc.; Aspinwall & Treadwell, hives, extractors and smokers; Mr. Newcomer, chaff and simplicity hives; Dadant's foundation and a full line of supplies.

Stanley exhibited his automatic extractor and seemed to be surrounded by an interested group. W. E. Clark, smokers and supplies. Betsinger, wire cloth separators; while many other useful articles were upon exhibition. The committee upon exhibits were: Ira Barber, R. Bacon, and J. L. Schofield. Some of the exhibits were commented upon favorably and some sarcastically, and evoked a storm of criticism; and a motion to refer the report back for revision was unanimously adopted.

A happy feeling pervaded the convention during the entire session, and it was a sort of a love feast all through. Several visitors were with us from other states: from Vermont, H. D. Davis, J. E. Crane, A. E. Manum and E. O. Tuttle; Mrs. Thomas from Pennsylvania: Mr. Porter from Virginia; T. T. Bingham from Michigan; A. I. Root from Ohio; Mr. Abbott from England.

Hartford, N. Y.

THE SHEBOYGAN COUNTY (MICH.) BEEKEEPERS' SOCIETY.

Reported for the American Apiculturist.

MRS. H. HILL.

The Sheboygan Co. Beekeepers' Association met at Hingham, yesterday, the 13th, at 10 A. M.

Nothing daunted by the forbidding aspect of the weather and roads, three sleighloads of merry beekeepers left Sheboygan Falls at 8 A. M., and in due season arrived at the hospitable home of Mr. L. H. Baldwin, where roaring fires and kindly greetings soon dispelled all thought of any trifling discomforts of the ride.

Meanwhile, through the windows, the long rows of comfortable and beautiful chaff-hives, and, in the

distance, the bee-house of the out-apiary, were plainly visible.

At the appointed hour, all repaired to the Hall near by and were greeted by a goodly number of assembling beekeepers. During the day, the following questions were discussed:

Do bees need water in winter, and how may it be supplied?

General opinion that condensation affords sufficient moisture, unless temperature is above 60° and brood-rearing in progress. Also that bees are most quiet at 45° or a little below. Water may be given in sponges, or in flat bottles, by means of lamp-wick. See "Api," vol. 4, p. 151.

Will bees *usually* store sufficient honey in brood-chambers for winter stores?

Italians will. Germans will not.

Winter ventilation. On summer stands, entrances should correspond to size of colonies and to method of packing; heavy colonies having full-sized entrances. Upward ventilation hardly need be provided, as hives will not be air-tight. Claimed that air will pass in at one side of entrance and out at the other.

Bridges should be placed over combs in winter, affording free passage from comb to comb and also room for bees to cluster.

Winter passages through the combs are advantageous, though they will afterwards be filled with drone comb. Large openings cut in combs will also be thus filled.

To prevent increase, the Simmins non-swarming method was given. Have frames run parallel with entrance, and continually keep several empty frames in the front end of hive, by taking away combs as fast as built and replacing with empty frames. Claimed that bees will not swarm, as long as any part of the brood-chamber is empty.

Plan for artificial swarming. Remove the old colony to new stand, after taking from it, the comb containing queen and adhering bees. Place this comb in empty hive, on old stand and fill up with empty combs, or full sheets of foundation. Allow old colony to rear queen or supply one.

To prevent swarming during honey-flow, be fully sure that from the very first, bees have abundance of room, air and shade. Might, in case they grow lazy, take away their combs for a day. Might, also, take them away permanently, giving them to weak swarms, or to nuclei, previously started, and replace with empty combs or foundation. Mr. Baldwin gave explanations here which I did not fully understand and may allude to later.

Decided that in the production of comb honey, the German bee is best; for extracting, the Italian is preferred.

In connection with prevention of after-swarms, it was asked if violent jarring of combs will destroy queen-cells. Decided that it will not, provided the operator understands his "biz" well. Method of hiving half a dozen after swarms together, advocated.

In the use of foundation, mere starters, in sections, was advised; and "all you can afford," in brood-chamber.

The fact was alluded to, that cappings and bits of wax left near the hives will be utilized by bees, in comb-building.

Should sections have side-passages? In connection with this, a specimen section from Dr. Tinker was shown. Decided to be advantageous as affording freer access, containing less wood and presenting a better appearance.

In regard to wire cloth for separators it was thought that it would not afford the necessary rigidity.

Extracting from brood-chamber advocated only when the queen is crowded.

There was a difference of opinion

as to whether honey is made darker-colored by being stored in dark combs: some thinking it would naturally be thus made a little darker; others thought not.

Mr. Alley's queen-nursery and also the drone and queen-trap, were exhibited and attracted a great deal of attention;—also the Handy Book and beautifully bound volumes of the "Api."

The utmost harmony and good feeling prevailed, and three new members were added. It was regretted that two prominent members were absent, Mr. E. Peterman of Waldo and Mr. J. Roberts of School Hill.

The society is a re-organization, dating from May, 1886, at which time it adopted the constitution of the old society, for some years inactive.

At the dinner hour, Mr. A. H. Brayman vied with Mr. Baldwin, in hospitality and kindly attentions, to all present.

The meeting adjourned to May 5, at the same place, and we drove the ten miles home through blinding sleet and the early darkness, all undismayed at the rapidly increasing snow-drifts, and never for a moment regretting that we had ventured on the rather uncertain and uncomfortable day's journey. Brother and sister beekeepers, go ye and do likewise.

Sheboygan Falls, Mich.

GLEANINGS FROM CORRESPONDENCE.

Cape May City, N. J.

MR. ALLEY: That drone and queen-trap is about the neatest thing I have got hold of. With me it works perfectly.

GEO. W. BLAKE.

Wonewoc, Wis.

FRIEND ALLEY:

Have not received Apiculturist for this month (Jan. 1887). How do you suppose I can do without one of the best bee journals published? It is four times as good as it used to be.

Yours,
L. N. TONGUE.

Andover, Mass.

DEAR MR. ALLEY:—

I like "Api". It is A 1. No nonsense, always full of instruction, articles from men of experience and good judgment, who know what they are writing about. The mechanical execution is ahead of any paper I see and I take half a dozen. As long as you keep it up to its present standard, I want its monthly visitation.

There is no bee journal I read with more pleasure and profit than this.

REV. L. H. SHELDON.

Nineveh, Indiana.

MR. HENRY ALLEY:—

I received the two copies of the American Apiculturist. I like it better than any bee journal I have seen yet, and I have samples of two others. Enclosed find $1.50 for "Api" and queen as soon as she can be sent.

Yours,
L. B. GRAVES.

Hamilton, Minn.

FRIEND ALLEY:

I wish to express my thanks for such a good bee paper. It is just O. K., and I wish it came every week. The bound vols. are excellent.

C. H. BABCOCK.

Milford, Pa.

MR. ALLEY:

The "Apiculturist" and Handy Book both received, and I feel very proud of them. The Handy Book is just grand and is worth many times its cost to me, as I am a new hand at the business. The "Api" is the best bee journal I ever saw, and I think it is the best that is published in America.

RUSLING DEWITT.

Lake George, N. Y.

HENRY ALLEY:

Dear Sir: January Apiculturist to hand. I saw the slip of paper notifying me that my subscription had expired. By all means continue the journal. I would not be without it for five times its cost.

F. A. LOCKHART.

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., APRIL 1, 1887. No. 4.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt delivery. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

FEEDING SUGAR.

R. L. TAYLOR.

Since the publication of my article in the January number of the "APICULTURIST" for the present year on the subject of sugar-stores (in which I ventured the opinion that with such stores I could winter bees with practical certainty), I have received various inquiries asking for the method and time of feeding, for information touching the kind of sugar and its preparation, and the after management necessary to secure certain success in wintering; and it may be of sufficient interest to the readers of the "APICULTURIST" to warrant me in answering these questions through its pages.

It must be understood in the first place that no colony, not in a normal condition, can be wintered with certainty. I would not say that a colony must be strong nor even of average strength, but it should be of sufficient strength so as not to feel a conscious need of additional numbers, for very weak colonies are much more likely to breed unseasonably. The bees must be healthy and the queen vigorous. The uneasiness and excitement in a colony consequent on the loss of its queen precludes certainty in wintering even under the best conditions.

Having then an apiary consisting of colonies in a normal condition, the problem is how to get each colony restricted to an amount of comb equal to that of five L. frames and to have that comb supplied, to the exclusion of honey and bee-bread, with at least twenty pounds of good sugar-syrup at or soon after the time when the last brood in the hive emerges from the cell.

The first thing to receive attention is the obtaining of an adequate supply of sugar. It should be pure granulated sugar. I have used Havemeyer & Elder's with satisfaction. In making the sugar into syrup the proportion of water used should be one pound to two pounds of sugar. It is better to have the proportion of water less rather than more and only soft water should be used. I make the syrup by first putting say thirty pounds of water into a flat-bottomed vessel (a wash boiler will do) placed on the stove and when the water begins to boil I pour into it gently sixty pounds of the sugar; it will dissolve as it drops into the water and so preclude any necessity of stirring and any danger of burning. The mixture may be stirred lightly at first but I never stir it afterwards. The stirring

recommended by some has I think much to do with the granulating of the syrup sometimes complained of. Some again advise the use of acid to prevent this granulation of the syrup but I have never used and have never seen any necessity for it. After the sugar has been added to the water let the syrup come to the boiling point, when it is removed from the stove and is ready for feeding as soon as its temperature falls to about 100° F. While on the stove any scum that may rise should be removed.

Now, with a supply of empty combs obtained from the stock of surplus combs, increased if need be by extracting the honey from any combs free from brood and bee-bread that can be got from the brood-chambers of the colonies to be fed, we are prepared to give the bees an opportunity to do their part of the work. But when shall they be allowed to begin? This will depend somewhat on the season; but just as soon as a considerable proportion of the brood-chambers are free from brood the work should be taken up with ardor. When this time comes, take a hive prepared with the required number of empty combs and a division-board, to the first colony to be operated on, and set the hive with the colony off its stand and arrange the other hive in its place ready for occupation by the colony. Now shake and brush the bees off their own combs upon the ground in front of the hive prepared for them, when they will at once take possession of it and the same process is pursued with the next and the rest.

To do this work well, one must take advantage of times when the bees are quiet as on cloudy cool days or during the cool hour of early morning or of sunset; and then, if many colonies are to be treated, promptness and energy must be displayed. If any robbers are abroad keep everything secure from their curiosity; and, when a comb containing brood is found, give it to a colony devoted to the duty of caring for any brood that may be found as the work goes on.

When I have a few colonies thus changed into new hives I proceed at once to feel them. I furnish each with a second story and within, on the top of the frames already in, I fix a four quart tin milk pan firm and level, fill it with the warm syrup already prepared and cover loosely with a piece of rather light cotton-cloth about 16 or 18 inches square. Success with this milk-pan-feeder all hinges on the manner in which the cloth is put on. Fold under two opposite corners, so that the syrup will not be entirely covered, and draw together at the middle as it is placed in position, so that there is sufficient slack cloth on the syrup to allow it to settle with the syrup to the bottom of the pan; otherwise, the opposite corners of the cloth will cling to the edges of the pan, so that the cloth will after a little hang across the pan instead of settling with the syrup and as a result many bees will be lost.

Instead of pans almost any capacious feeder may be used. I use pans for the sake of economy as they can be obtained by the dozen for six or seven cents each.

In a day or two, as soon as the first pan full is stored the pan should be again filled and when this is all taken up by the bees the super and feeder may be removed and the colony marked ready for winter quarters.

To a few of the stronger colonies a double set of empty combs should be given, and also twice as much feed so that there may be a few sets of combs (filled with syrup and capped over) in reserve, to be used later in supplying those that have

been caring for the late brood and to provide for other contingencies.

It is far safer to have all feeding done as early as possible at least as soon as the middle of October and earlier is better though I have done it later with success. But beware of being caught by the cold weather when the bees will no longer carry down the syrup. If worst comes to worst in the absence of any other resource, a few colonies if placed in a warm room could be supplied very well.

Another way in which sugar stores may be got ready for use is to select a number of colonies at the beginning of the summer honey dearth, reduce the brood-chamber of each to the capacity of five L. frames, and then give to each empty combs and syrup as fast as the bees will appropriate them. Treated in this way a colony would furnish capped sugar stores sufficient for several others and these stores may be easily substituted at the proper time for the combs with honey in the several colonies.

As this article is already long enough I shall reserve the remaining questions of winter management for future discussion.

Lapeer, Mich.

For the American Apiculturist.

SIMMINS' NON-SWARMING METHOD.

JAMES HEDDON.

In the "American Bee Journal" of 1886, page 727, Mr. Hutchinson discussed the above method as taught by Mr. Simmins of England. In your last issue, Mr. Editor, I notice that Mr. Samuel Cushman discussed the same system. Both reviewers seem never to suspect that the system and its principles were taught, practised and found wanting as long as sixteen years ago, in this country. I have no doubt but that you and many others of the older members well remember how it was presented by Gen. D. L. Adair of Kentucky and E. Gallup of Iowa. Back numbers of the A. B. J. are replete with reports and discussions of this method, if I understand Mr. Simmins' method correctly.

In 1872 Gen. Adair published a twenty-five-cent pamphlet, entitled "Progressive Bee Culture," in which the system was detailed. Whether or not I correctly understand the Simmins' non-swarming system, I certainly understand the Adair system, and at the time it was being tested, I joined in the experiments by constructing and using, three seasons, thirty-two hives specially designed to carry out the system.

The claims for the "new idea" system as it was then called, were as follows: Whatever was to be the capacity of the hive, whether run for comb or extracted honey, it was to be all strung out horizontally, never but one story, or tier of frames high; all frames of the same size. In producing comb honey, it could be stored in full-size brood-frames in large sheets, which were then in such good demand with "honey-cutters," who put comb and extracted honey together in glass jars. You may be wondering if there wasn't occasionally some pollen or cocoons found in comb honey stored in this way; but let me inform your junior readers that in those days, even such honey as *that* sold for twice as much as the very nicest in our little sections of to-day. This was not all; in those days the buyers used to seek *us*, and many times our whole crop was contracted for long before either buyer or seller knew how much that crop was to be. These were the days when the eyes of the apiarist gladdened as

he saw the clover and basswood blossoms opening, and sweet was the music of the hum of industry upon which wife and child depended for food and raiment. Shall we never experience such anticipations again? In those days it seemed as though every one, whether dealer or consumer, wanted honey. Now, the tables seem to be reversed.

In these days, no doubt, such a system, if practised at all, would replace a part of the narrow brood-frames with wide frames containing sections.

The theory as taught us at that time, we carried out here, in the following manner: I made thirty-two hives, 41 inches long, calculated for twenty-eight to thirty brood-frames, 9½ by 14½ inches outside measure. Frames run crosswise, and entrance was at the end. These hives were run for extracted honey, and the most of our combs had to be built in the frames the first year.

We placed nine or ten combs with brood and queen at the extreme back end of the hive and the theory was that to prevent swarming we must always keep empty, or partially empty frames, or empty or partially empty combs, between this brood-nest and the entrance. Now, this seems to be the vital point of Mr. Simmins' method. Our three years' experience here proved that, with the addition of shade and a large entrance, such space given in such manner proved to accomplish all that was claimed for it in the way of prevention of swarming. I think I never knew of but one colony casting a swarm during the entire time, while other colonies were swarming freely. I am not positive whether in the above practice I exactly followed Adair and Gallup, for Mr. Herbert A. Burch and other prominent honey-producers were writing upon the subject and giving us pointers at the time. I haven't time to look over the old files of my bee papers nor need I do so, for you and all of your old-time subscribers will remember it.

Now the question will naturally arise, If this system of hive-construction and manipulation will really prevent swarming, why did it become obsolete? Well, it did, and is almost forgotten, and I will answer that question as far as I am concerned.

I found so many drawbacks and disadvantages necessarily connected with the horizontal system and manipulation required to produce the result as compared with the tiering or vertical system, that the game wasn't worth the candle. In fact, I found much more to lose than gain. So far as I know, all the rest who used the system arrived at the same conclusion; at least, they arrived at a conclusion which led to its abandonment.

I have given the above as my argument against the non-swarming system, that I understand Mr. Simmins to present. *What* I have given are well-known facts. I have by no means presented this in anticipation of Mr. Simmins' discovery or invention; far from it. If Mr. Simmins' proposed plans are not good, as this essay claims, what earthly objection can there be to his having the credit of them, or a patent covering them? If they are good, surely he has invented something different from what we had before, and perished upon our hands. We weighed the system on the scales and found it wanting. Weigh it again, if you please, and again I believe you will find it wanting, but if not it will certainly be because it weighs more now than then; and if such proves to be the case, surely there has been something added, and true it is that he must be morally blind or criminally selfish who could not see or would not admit, that to Mr. Sim-

mins belongs the difference between failure and success. If I am right, Mr. Simmins' non-swarming system will speedily perish. If I am wrong, his system is not like the one I have described above, for patent law declares that abandonment and subsequent adoption of things claimed to be alike, is evidence sufficient to negative that claim. I have no doubt but that Mr. Simmins is original in his invention, but it seems to me he is not prior. However, dead priority cannot antedate living utility. Let us be honorable if we do not see all things alike.

Dowagiac, Mich.

For the American Apiculturist.

HOW TO CREATE A HOME MARKET FOR HONEY.

MRS. S. E. SHEARMAN.

There seems to be great depression in the honey market as regards a paying price for the production of honey. Many fearing that there is already an over-production, and not any room left for a novice or beginner, and more especially if the beginner is a woman, I beg leave to differ somewhat with those of the above opinion, especially as long as there is so much "sweetness wasted on the desert air," for the want of the busy little bee to gather it and so many children in these United States of ours that do not so much as get one good square mess of honey a year. Then, I say, rear all the bees you can to gather all the honey they can and then instead of shipping it all to the large cities, sell it at home in the country. If you cannot sell it for the cash, barter it off for other produce or anything else that you can make use of. I have in this way worked up a very good honey trade at home. Only yesterday a nice young lady came and wanted to barter meal, flour screenings or anything from the mill. I gave her six lbs. of honey for a bushel of meal; she went off rejoicing saying that she would not take five dollars for that jar of honey for she loved it better than anything that she ever tasted in her life and never tired of it. I have in this way made many good customers. I extracted 1,036 pounds and took 100 pounds of comb honey last year all of which is sold except about 75 pounds of extracted. I got 12½ cents per pound for the extracted and 16⅔ for the comb while a gentleman living a few miles from town only got 10 and 12½ for his. Last year and the present winter have been very hard on bees in this portion of Texas, especially the black or native bee. Many have lost all they had; so far I have not lost a single colony. They are bringing in pollen this evening.

Feb. 6, 1887.

Salado, Bell Co., Texas.

For the American Apiculturist.

APICULTURE IN CALIFORNIA.

A. NORTON.

BEES, ETC.

Bees were first brought to California somewhere about 1854. What must have been the relations of insect life to plant life for ages before this, one has only conjecture for the basis of an opinion, save when he wanders to some more distant mountain wild, where bees do not happen to abound, and sees the variety of blossoms frequented only by the few bumble bees and the smaller kinds of insects. Then he realizes how nectar has been produced beyond estimate, an in-

considerable fraction of which was consumed directly, still less ever stored. Yet we find some flowers as curiously and wonderfully shaped for cross-fertilization through the agency of insects as if the honey-bee had been taken originally for the insect pattern. Bumble-bees, "humming-bird-moths," mason bees, and others whose visits to the flower are after the same manner as the honey bee's, have played an important part in the fertilization of such species; and moths and various small insects have assisted in the case of others. The Creator always has means to bring about his ends.

And what must have been the extent of the deprivation suffered by the grizzly bears during these untold ages is to be conjectured also. Probably it was lessened by the bliss of their ignorance. Instead of the stores of sweets so often revelled in by their smaller, but more favored, eastern neighbors for generations before their enemy, man, performed his one solitary benefaction for them, they had to put up with the consolation afforded by the discovery of stray bumble-bees' nests now and then, whose aggregate sweetness could hardly be more than as a drop on the end of a respectable grizzly's tongue.

The first bees that were successfully brought to California cost as high as $150 per hive. A swarm taken to San José is said to have cast six or seven swarms the next spring. The first taken to Los Angeles gave but two swarms. Young swarms then brought from $75 to $100 each. So a start in beekeeping was quite expensive. Italians were introduced not much later; and given good blood to start with, they might have been easily kept in their purity for some years. But bees soon began to increase and gain a foothold, so to speak, and it was not many years before they abounded among the apiaries of the southern counties and also made starts in life for themselves; and wild bees became so plentiful in trees and rocks everywhere, that the California grizzly could survey his uncounted wealth and look with disdain upon any other bear in the world.

Bees in most of the large apiaries are hopelessly hybridized. I dare say that most apiarists will argue on the side of Heddon in favor of combining the points of different races. Their views are not quite up to his, however; for, instead of select breeding from regulated crosses, they put different kinds together and leave crossing and intercrossing to nature. The main source of yellow blood is the Italian. The other races are but sparingly introduced. From the different degrees of mixture, it is hard to give any definite report on the merits of hybrids. Moreover, it is doubtful if many can furnish any facts and figures of experience with full bred bees of the yellow races to place alongside these results from cross-breds. Mr. Wm. Muth-Ramnssen favors a preponderance of Italians with a dash, say one-eighth to one-fourth, of black blood. Some seasons ago I observed the first season's result of triple crossing in the apiaries of Mr. Wilkin. His bees in one apiary consisted of 700 stocks in all stages of crossing between Italians and black, but with a preponderance of the former and a goodly share of pure Italian. Among these he introduced pure Syrian blood with a view solely to get a mixture of the three. It being the first season, I could only see how the cross appeared and behaved; but Mr. Wilkin has since expressed himself as satisfied with it so far as he could observe.

I have been in correspondence with Mr. Gust. Murhard of Port-

land, Oregon, who has apiaries in that place and southern Washington Territory. He is one of a few pioneers in that region of the industry conducted as it should be. And I hope to hear good reports from him and his contemporaries from time to time. Mr. Wilkin has tried various races up there. He has imported the Mt. Lebanon Syrians from Benton, and he advocates this race as better in his experience than any other, although last season he found that the first to work in the sections were the progeny of a Carniolan queen mated with a Syrian drone.

The season of 1884-85 was what is known as a dry year. The winter rains were insufficient to support permanent growth, and wild flowers either perished or went prematurely to seed. The honey flow was scarce, and bees starved in immense numbers. My own suffered as severely as any. That season I had made a start with the Cyprians. A two-frame nucleus obtained the last week of March, 1885, and given two extra frames of brood, had increased so much by the 10th of May that I had to divide them to prevent swarming. The two colonies thus produced stored honey sufficient to keep them in plenty till the succeeding spring, while my black and Italians hybrids began starving in the fall. I had taken them on trial; and hence I did not Cyprianize my apiary save to a limited extent before testing the bees, which with such a dry season brought it too late until the following spring. Last spring, I infused the Cyprian blood throughout my stocks, having many grades of course among the purely mated. And, while, in as rich a season as was the one last past, any bees will do well and the difference between races is not so clearly shown, still I am fully pleased; and I am much inclined to indorse the opinion of B. F. Carroll of Texas, who writes me that after trying the Cyprians for several years, he has resolved to discard all others; and that he wants nothing but pure Cyprian blood in his aipary.

For the temper of Cyprians I have not much to say in apology: and I seldom expect to handle gentle bees. One who has only a few colonies near his residence, naturally wants them gentle; and it is a source of true pride and pleasure to have Albinos, or Italians that he can look through without veil or smoker. But I have yet to see an extracting apiary of such proportions as to render rapid handling necessary, to get around with one extracting in time to begin another in which the bees are not confirmed misanthropists, in which they will not dig up the tomahawk, marshal their warriors and meet man at the outermost border of the apiary. I never saw pure Italians composing entirely a large apiary. I don't know how they would behave.

But, in my opinion, the operator of many hives should get used to handling vicious bees; and then the character of Cyprians and Syrians will not trouble him. But to do them justice, I will say that Cyprians may at times be handled with comparative ease. At others it takes little provocation to set them on the war-path. I have never seen the Cyprian or Syrian bees that could not be handled all right if the operator possessed patience and fortitude. They and their black crosses are no worse in disposition than Italians hybridized with blacks. They are simply more determined and pertinacious. I propose to retain the Cyprians, and I hope to improve them next season by importing from Benton's best grade stock which this season I failed to do.

In the line of appliances, bee-

keepers of this state have kept well up with the times in some respects, though the tendency to use as few superfluous things as possible is perhaps to be noted and commended as well. But in style and make of honey-extractors I can safely say that apiarists in Santa Barbara, Ventura, and Los Angeles counties have been in advance of those in any other state; and, until the invention of the Stanley automatic extractor, there was none as good as the California machine. They are made to hold four, six, or eight frames. Some are provided with breaks that work nicely. The case is generally of strong galvanized iron. The comb-baskets swing around like doors and therefore when the uncapped combs are put in, they need not be taken out till extracted from both sides. Before the Stanley extractor had been invented, I saw a six frame extractor in which the combs could be turned at one motion by means of a peculiarly arranged rod. Extractors are rarely provided with an arrangement whereby the operator "winds up" a weight, sets the machine going and may then turn aside to uncap more combs. The comb-baskets are strongly made; the size of the can gives it solidity and stability, and enables the operator to work rapidly by using both hands at once while placing or removing combs, thus accomplishing each in short order. For a large apiary, an eight frame extractor is to be preferred. For smaller ones the four-frame is largely used. It is hard to say how with eight frame-hives, the six frame extractor can be convenient; but with the Gallup hive it would be just right provided twelve frame hives were used.

Gonzales, Cal.

For the American Apiculturist.

FASTENING FOUNDATION IN SECTIONS.

Glenwood, New South Wales, Australia.
EDITOR AMERICAN "API."

Will you request Mr. W. M. Woodward to give his method of fastening foundation in sections both top and bottom, as he recommends on page 248, Vol. IV, of your journal? I have tried the matter with Parker's foundation fastener, but could not make it work to my satisfaction.

Yours etc.,
MAJOR SHALLARD.

ANSWER BY W. M. WOODWARD.

In answer to Mr. Shallard, I must say the fastening of foundation at both ends in sections requires a large amount of skill to do it well; but when well done is to my mind far the most superior way.

Use the Parker fastener made $\frac{1}{8}$ inch less than the section inside; cut foundation $\frac{1}{8}$ less than inside of section, horizontally, and two rows of cells (or three rows will do) larger, perpendicularly; have a board large enough to lay four, eight or twelve pieces upon it and pick any one off without disturbing the rest. Now for the

MODUS OPERANDI.

Select a day, if possible, when it is very warm and clear, one when the sun shines very warm. Place the board before a window, with all currents of air cut off, and table, with fastener on, close before it; raise the back edge or lower it until you receive just the amount of heat required to warm the wax as fast as you can use it.

Now, when ready, sit down and at first deliberately place the foundation around on the board and watch at first carefully, and as it gets just as limp as you can handle it (all over) it is ready. If it turns white, it is too warm and will break.

Now, place the end of foundation in the fastener as usual, being careful to put it in square and fasten, doing all in the sunshine, so as to keep up the heat.

If now the top of the section be tipped away from the fastener, and the section turned clear over in that way, the limp foundation will hang straight and drop square into the bottom of the section until it strikes the bottom-bar. Now raise lever again and place this end in as before. Observe carefully how high to raise the lever to have it stretch the foundation just as much as it will bear, while it is yet as warm as directed above. This is indeed a nice job, but it can soon be learned, and the work can be speedily done by an expert, as the time required to invert with one hand and fasten with the other does not exceed one-fourth loss from the usual way. The work must be done at a single stroke, as any after work on it is sure to draw the foundation all out of shape.

In the absence of sunshine I succeed just as well by a fire, keeping the above principles strictly in view. Sections must be square and solid.

Custer Park, Ill.

SPRING MANAGEMENT OF BEES.[1]

A. C. MILLER.

In beekeeping as in all other branches of agriculture we must in winter prepare for summer and in summer for winter. It is time now that we should be planning for our spring work.

Second in importance to the successful wintering of bees, is the care they receive in the spring, as on it, to a great extent, depends the success or failure of the season. On the first mild and pleasant day in April, the colonies should be overhauled, all empty combs should be removed, honey supplied where needed and the brood-chamber contracted until the bees fill it completely. Do not remove the chaff, for the bees need it almost as much now as in mid-winter. Thus arranged, the bees can keep the brood apartment at that high temperature so necessary for rapid and successful brood-rearing.

Raising the temperature of the hive in the spring tends to stimulate the queen to increased egg-laying; but to induce her to continue, other methods must supplement it. Stimulative feeding at this time is not safe, as it induces the bees to fly out in days when they would become so chilled that they would be unable to return and there are no bees to spare at this season.

The following plan works very well with slight if any danger to either brood or bees. After the brood-chamber has been contracted as directed, if there are any combs having brood on but one side, turn one of them so that the empty side is toward the centre of the cluster. This will give laying room for the queen where she is quick to use it. In about a week, repeat the operation with another frame and so on until the combs are full of brood; then and not until then is it safe to add more empty combs. See that they have plenty of honey at this time, for brood rearing consumes a large amount of it, and to have them run short of stores will stop the queens laying and sometimes cause the bees to destroy all unhatched eggs and young larvæ.

As the season advances stimulative feeding may be safely commenced; it will stir up any dilatory queens and incite the others to increased activity. About four ounces of diluted honey

[1] An essay read before the R. I. Beekeepers' Society, Dec. 22, 1886.

per day is sufficient for this purpose; feed inside of the hive and feed regularly. As a substitute for pollen, use rye meal; place a dish of it in some sheltered and sunny spot where the bees may have easy access to it. To start them to work on it break the cappings of a small piece of comb honey and place on the meal; they will soon find it and once at work they will not desert it until they can get natural pollen.

To get as large a force of bees as possible by the time the honey harvest commences, is the object sought for by all systems of spring management, and the foregoing method has been proved to be safe and effectual for this locality.

Drownville, R. I.

For the American Apiculturist.

TREATMENT OF BEES WHEN TAKEN FROM THE CELLAR OR BEE-HOUSE.

G. M. DOOLITTLE.

As the time is near at hand when our pets which have been housed all winter must be placed on their summer stands and cared for, perhaps, I can do no better at this time than to tell the readers of the AMERICAN APICULTURIST what I do when setting out and afterward, until time to put on the surplus arrangement. I manage the setting out of bees differently from what most apiarists do and after trying all the plans for years, which have been given, like this much better than any other. Beginning with the first day that the bees which are out-doors gather pollen, I commence at about 4 o'clock P.M. (if the mercury stands as high as 55° in the shade), to set out a part of them, say from five to fifteen colonies as the case may be, scattering them about the yard so that they will be as far apart as possible and yet be within the limit of what space I wish the yard to occupy. This is done so that I need keep no track of where they formerly stood, and yet not have any mixing of bees as would be the case were all set out at once or near together. To set out I place my spring wheelbarrow and lighted smoker near the door of the cellar or bee-house, when I carefully open the door and quickly step in and get the first hive nearest the door, placing it on the wheelbarrow, when the door is immediately shut again. The bees in the hive now begin to realize that their long winter nap is at an end, and if I took no precautions would soon be out of the hive and in the air, losing their homes and stinging fearfully. To avoid this, I now blow four or five puffs of smoke in at the entrance to keep them quiet, when the entrance is closed by laying a square stick in front of it, when the hive is wheeled and placed on the stand it is to occupy. The stick is now taken from the entrance and the bees allowed to fly. This they will do as leisurely as they would had they not been disturbed at all, which is a great advantage to them in marking their location and repelling robbers. The next pleasant day more are set out in the same way and at about the same time, scattering them about as before, but paying no attention as to how near they come to those already out, for they are liable to mix only with those set out at the same time. I sometimes set out about the same number in the morning of a pleasant day beginning to carry out as soon as the mercury reaches 45°, because in this case the bees must get through their greatest flight before those already out become active, or else there is danger from robbing. In fact, those set out in

the morning are much more liable to be robbed at best, and for this reason I set out mostly in the afternoon. By this plan all the fatigue usually attendant upon this work is overcome as well as the mixing of bees, keeping record of where each hive stood the year before, etc., etc. As soon as set out the next work is to see that all have plenty of stores, and if in a tight-bottomed hive clean off the bottom-board. As I use loose bottom-boards, a clean bottom board is placed on the wheelbarrow to set the hive on, so I do not have to disturb the bees afterward, on this account. To find out about the honey or stores, the first cool morning go to the hive, take off the cover and carefully raise the quilt or honey-board and look for sealed honey along the top-bar of the frames. If plenty is seen they are all right till they are to be overhauled three weeks later. If little or none is seen they must be fed; for if we are to reap good results from our bees they must have plenty of stores at this time to encourage brood-rearing. For food at this time I prefer combs of sealed honey set in next the cluster to anything else. If no such can be had, we must feed syrup, of course; but the feeding of syrup, thus early in the season, entices many bees out to perish in unfavorable weather. Three weeks later, the hives are to be opened for the first time (unless we have some essential cause for opening them before), and the brood nest reversed by placing the two centre cards of brood on the outside and the outside ones in the centre. By so doing, a great gain is made as all the older brood are in the central combs which are generally filled nearly to the outside of the frame, while only small patches of eggs and small larva are in the outer one. This reversion causes the now inside frames to be filled entirely with brood in the shortest space of time, while there is little danger of chilling the brood as there would be if the spreading plan was adopted thus early. At this time we should also know that each colony has plenty of stores to last two or more weeks, for at no time should the bees feel that they must economize in honey, if brood-rearing is to go on rapidly, which it must at this time if we are to get a good harvest. In about ten days a frame of empty comb is to be inserted in the centre of the brood-nest, or better still, a frame of honey which has previously had the sealing to the cells broken. By the removing of this honey the bees are greatly stimulated and brood-rearing accelerated. In eight or ten days more the brood nest is again reversed, when, if all has worked well, there will be brood in all but the two outside combs, and generally in these, but if not there soon will be, owing to full sheets of brood coming next to them. If honey is now coming in, the surplus arrangement is to be put on in a day or two, and it is better to put it on in a week or so in any event. This, in brief, is my plan of management from the time of setting out till the first honey flow from clover.

Borodino, N. Y.

For the American Apiculturist.

PRICE OF HONEY.

DR. C. C. MILLER.

G. W. Demaree talks quite sensibly in March "Api" and I think it is time some one talked a little on that side of the question. The idea that the price of honey can be fixed in advance by beekeepers with no reference to demand and supply seems to be in the minds of some, and it has been somewhat amusing

to see, I think at least two writers say something like this, "I would suggest sixteen cents for comb and twelve for extracted." Evidently these writers had the thought that beekeepers actually would meet and fix upon a price, and that price would obtain, and they hastened to suggest a proper price. If the thing is to be settled simply by our *ipse dixit*, I would suggest 22 cents for comb, and will be magnanimous enough to concede to those who raise extracted honey the privilege of fixing upon a price to suit themselves. I think it quite possible that beekeepers could agree upon a price and just possible, although extremely improbable, that all might be induced to hold to that price, but in that case there is the highest probability that we would keep a large part of our honey. But to fix upon a price, unless a *very* low one, without reference to the law of supply and demand and sell all the crop at that price for sure, the thing can't be done. Even with so stable an article as wheat the thing could'nt be done. If all the wheat-raisers in the world should make a cast-iron combination and agree upon a price above the average in a year when the yield was above the average, the inevitable result would be that the wheat would not be used.

But while there has been much written that is unreasonable I am not with Mr. Demaree in his last paragraph, if I understand him rightly. That is, I do not think there is *nothing* that can be done by some kind of united action. I think he is entirely right that everything possible must be done to cheapen the cost of producing, but I think we are not compelled to take blindly just what is offered us any more than it is possible for us to compel consumers to give any price we may fix upon. In middle ground there is generally safety. Just how much can be done by united action I am not prepared to say. There is one thing, however, that might be done if all — ah! that *if* — if all would pull together. That is, obtaining reliable information as to the supply. There is no use trying to ignore the law of supply and demand. If the supply is known and the demand is known, it is not so difficult to estimate somewhat as to the price. The demand is not so very fluctuating, neither does it fluctuate with great rapidity and might be pretty closely estimated; but still it could hardly be fixed upon to a certainty. The supply, however, being all in the hands of beekeepers, it is possible to ascertain exactly how much is produced each year. Years ago I strenuously urged this, and a plan was devised whereby full information could have been obtained as to the supply, at a cost of not more than two cents to each beekeeper if each had responded. But they did'nt, and the thing was a failure. Not one in ten cared enough to write a postal. Perhaps the time is now ripening for something of the kind. Perhaps I may explain a little how such information would be of benefit. A few years ago there were buyers who would pay cash for honey in any quantity. I suppose some of them made by it, but one year came when they were badly bitten. They had underestimated the amount produced and had to sell for less than they had anticipated. Some of the largest buyers since then will handle honey only on commission. It is too uncertain a matter, and those who now pay cash for honey are fewer in number. If a firm knew just how much honey was in the country they could tell just what they could afford to pay and it would be better for all parties. Another thing: suppose a buyer asks me in August or September what I will sell him my crop at,

how can I decide intelligently? For anything I can then find out the crop may be half or double the usual quantity, and yet I have more than once been asked to set a price on my honey before it was harvested. Perhaps it is not necessary to pursue this further as no one may dispute the value of accurate statistics seasonably obtained, but how are they to be had?

I am glad to see the Apiculturist still improving and I believe it is a reliable affair even to its advertising pages with a single exception. On those pages I find advertised a book called "A Year among the Bees" of 128 pages. Now to my certain knowledge, said book contains only 114 pages. The question arises, if any purchaser in answer to the advertisement receives the book and finds it fourteen pages short, by whom shall he have the lacking pages written, by the author or the editor of the Apiculturist?

[Pretty good, Doctor; nevertheless, if we can count correctly, the book you mention has 128 pages, that is counting the pages on which advertisements are printed.]

For the American Apiculturist.

A WOMAN'S SUCCESS IN BEE CULTURE.

MRS. H. HILLS.

VISITING THE BEE-CELLAR, AND CARE OF THE BEES.

"*Many beekeepers like the* HONEY *and the* MONEY, *but do not care particularly for the bees.*" Thus said to me lately, a very enthusiastic and successful beekeeper.

Might not this remark help to solve the vexed problem of so much unsuccessful beekeeping? We all know, for instance, how plants will thrive and rejoice under the loving eye, and deft hand of the true gardener, who instinctively understands and anticipates their every need and desire, until in their wonderful response to his intense devotion, we can hardly regard them as inanimate. Compare them with the poor orphans of their kind, who languish under the earnest, but unskilful, hands of him who cultivates them only from necessity.

I cannot help thinking, that to my all-absorbing interest in the bees themselves, may be attributed the fact, that I have never yet, in my three years' experience, lost a colony, from any cause whatever.

Next to the delight of working with the bees, is that of writing about them. Do you think any of your readers would care to know how they looked yesterday, on being visited for the third time since Thanksgiving Day, at which date they were placed in winter quarters?

I enjoy this occasional visit so much, that it seems as if every one else must, also, want to hear about it.

I have already described my cellar arrangements, except, perhaps, that the bee-apartment is separated from the vegetable-cellar, which is in daily use, only by a double partition of heavy horse-blankets, very carefully arranged. No ray of light can penetrate to any part of the cellar.

Though we seldom remain in the bee-apartment above five minutes, no days of the winter are so eagerly anticipated, as those set apart for these visits. Immediately on rising from the breakfast table, preparations are made. You are acquainted with Mephisto, the Doubter, the Denier, whose vision can never penetrate beyond the gloom, that, so far as beekeeing is

concerned, always bounds his own mental horizon? Most beekeepers will recognize the type.

Well, Mephisto, carrying a dim light, proceeds to lead the way to the cellar; while the beekeeper, armed with a dust-pan and broom, and a long hooked wire, meekly follows. And just here, I would like to ask, why Mephisto, who would inevitably ruin all the bees, if allowed to meddle with them, should always naturally lead off, in this procession of two.

But to the bees. Truly that dark cellar did appear to be a very happy place — air quite soft and pure — no trace of mould on the cement floor or stone walls. Not a bee was seen to fly out of the twenty-seven hives; and so few dead bees, that we decided not to sweep them up, as we have always, at mid-winter, heretofore done. No use for the hooked wire, —as indeed, the backs of hives are raised considerably higher than fronts, to facilitate removal of dead bees. A good many colonies seemed perfectly quiet, while from others, proceeded the most gentle, happy "hum" imaginable.

And so we silently hastened out, feeling it almost sacreligious, to have thus intruded, without invitation, into the quiet and seclusion, of this, apparently, so peaceful, winter home. And Mephisto, for once, was silent.

You will see that the report of the Sheboygan Co. Beekeepers' meeting in "Api," March No., should read in *Wisconsin*, instead of *Michigan*, as given.

Sheboygan Falls, Wisconsin.

CAN BEES TAKE CARE OF THEMSELVES?

Six Mile P. O., Wayne Co. Ill.

DEAR SIR:

The writer of this has thirty-five stands of bees in Langstroth hives. My business will take me away from home most of the summer. I want to know how to prevent my bees swarming. Will you tell me the best way to do it? I have been told that to cut out the queen cells in May and June would prevent swarming. Is that true? Will not the young bees come out and swarm, queen or no queen? Is it not as natural for them to swarm as it is to make honey? And will not they swarm without a new queen and keep coming out, doing no good?

If you will send me a line or two and let me know how to prevent swarming, I shall be obliged. Yours truly,

WILLIAM LEACH.

ANSWERS BY J. E. POND.

In reply to the letter of Mr. William Leach, which really amounts to the above question, I can only say that for more than twenty years I have been trying to get my bees to take care of themselves, but as yet have not succeeded. The "swarming impulse" is as natural as the instinct for gathering honey, and one is as easily controlled as the other; that is, neither can be in anywise controlled. It is true that swarming itself may be to a certain extent prevented by removing queens, giving room in the hive, etc., but none of these plans are certain or positive in their effects. It makes no difference what hive is used, if it is large enough, the ten frame L. being my preference. Manipulation may, to a certain extent, and at certain times prove advantageous, but cannot be relied upon at any time. In fact I know of but one means by which swarming can positively and certainly and at any and all times be prevented, and that is by using the queen and drone-trap. If one of these is attached to each hive, the owner may go where he pleases, when he pleases, and stay as long as he pleases, with the positive assurance that no swarm can issue

during his absence; and that no injury will be caused to his bees by their use. I have tested such traps myself, and know of hundreds who have tested them also, and have yet to learn of failure where used properly. I can most heartily and cheerfully recommend them to all beekeepers, and particularly to those whose business calls them away from the apiary during the swarming season, believing firmly that no one who uses them one season will ever be without them thereafter. As Mr. Leach asks for the best way to prevent swarming, my answer can be predicted from the above. The remedy is inexpensive, and when it is considered that excess of drones can be prevented, or those that are undesirable prevented from flying during the mating season, it is an actual necessity.

Foxboro, Mass.

For the American Apiculturist.

HONEY vs. BROOD.

C. W. DAYTON.

HERE, on the forty-third parallel, the bees are removed from the cellar from April 21 to April 25. From that time to May 15, the colonies become smaller because young bees are not reared fast enough to take the place of those dying of old age.

From May 15 the colonies increase in size, until June 20 finds the brood-nest equal to the full laying capacity of the queen.

This is the best time for the honey harvest to begin, and the colonies that are in that condition at that time are the ones that roll up the honey and cause the least trouble by swarming. Bees seldom prepare for swarming when there is plenty of field labor.

June 20 is about the time our honey harvests begin. If the apiary is well balanced, the honey gathering colonies are of about equal strength and ready for it. If the colonies are allowed to build up without help, some colonies will be weak and others strong. Such a condition should be avoided. One good colony is worth more for honey-gathering than one hundred that are weak; therefore do not make all weak for the sake of having them equal in strength.

To get honey we must have a strong colony, even if it takes the brood and bees of several weak colonies to make it.

Our honey harvests seldom last thirty-seven days, the length of time that is required to get bees from the new laid eggs into the fields as honey-gatherers. Thus it shows that all eggs laid after the harvest begins become idle boarders and consumers of the stores of the colony, except that they are required to maintain the existence of the colony.

Twenty thousand is plenty for this purpose, and that number can easily be reared in four L-combs. As is usually the case, the brood occupies eight or ten combs for a large share of the harvest, rearing raft after raft of worse than useless bees. The loss in this direction is great. It might often bring failure in the place of success.

I think the six extra combs of brood are fully equivalent to six combs of honey; this would equal thirty-six pounds of honey wasted in rearing worthless bees and twenty pounds more for their support, making fifty-six pounds to the colony and 5,600 for an apiary of one hundred colonies.

My aim is to secure that 5,600 pounds of honey. I have never known a season when the colonies could not support all the brood

they could rear, but I have known several seasons when it was hard to get fifty pounds per colony of surplus, thus the waste was the largest amount. It seems ridiculous that to secure fifty pounds of salable honey fifty-six are wasted.

When the colonies are building up in May and June, it takes from fifteen to twenty days to double the comb space occupied by brood. Two doublings reach the laying capacity of the average queen, but I have found some queens that would double the space again, so as to occupy from eighteen to twenty combs. The main trouble with weak colonies is not to make the queen lay eggs fast enough, but it is the lack of bees to care for the eggs that are laid.

In the case of the extra prolific queen, fifteen or twenty days of the honey harvest are spent in caring for brood, and consequently the colony will contain many bees and little honey at the close of the harvest.

In view of the foregoing conditions, during the harvest, I would want the most prolific queen in the weakest colony, and the less prolific one in the strongest one, as that would utilize the brood and save the honey.

Bradford, Iowa.

For the American Apiculturist.

A GOOD PLACE TO LOCATE.

JACOB CRANE.

I came here for my health five years ago which I lost in the Potomac army. I found the water here the purest on the continent and unequalled for all kidney and liver complaints. The nights are cool and refreshing to the invalid. This section is especially adapted to all kinds of fruits, tobacco, vegetables and bees, as red and white clover are very abundant. Buckwheat in bloom from the first of May until the first of November. White clover grows splendid everywhere it is sowed. Soil is freestone and for health this section cannot be excelled anywhere. This locality is especially adapted to northern and eastern men. We have a good many northern men who came here for health and they have organized to secure intelligent settlers from the north. The members have no financial interest in the organization, neither do they receive any compensation. They have issued a pamphlet descriptive of this highland view which they will send to all sending one stamp. I would like to see this section settled by northern men as my health is such I cannot live north.

Summertown, Tenn.

QUERIES

and Answers by Practical Apiarists.

ARE THE ITALIAN BEES A PURE RACE?

Query No. 16. Is the so-called Italian bee a pure race, or a hybrid, using the term hybrid in its common acceptation as meaning a cross? Facts, not theory, are required in answer. — K. R.

ANSWER BY JAMES HEDDON.

I use and prefer a hybrid strain of bees which I produced by crossing the two strains mentioned in my answer to query No. 11. I have no means of knowing whether my strain is absolutely "fixed" or not. I set no advantage in having it so "fixed." I think I prefer it wider open to further improvement. We have thought

that we could generally determine our hybrids from others when finding them at work on blossoms, and two successful bee-tree hunters tell me that they can tell them at a glance, every time.

In my apiary, I can usually distinguish them from common hybrids (we sometimes buy and bring in a few colonies) both by their motions and appearance.

ANSWERS BY C. C. MILLER.

I don't know whether you can get enough "facts" to cover the case, and "theories" conflict. You will do a large amount of reading to get all that has been said about it. Many insist that the race is pure. Others point to the fact that in its purest state, in its native region, appearances of a dash of black blood may be found. You may or you may not accept, as a reply to this, that variations may occur in the purest races. For instance, take the wild turkey, and suppose you have a pair whose ancestors, traced back to the creation, have always maintained the same characteristics and markings. If now, as a sport, or as a result of domestication, a light color results, you may say that just so far there is not a perfectly fixed type; but as there has been no mixing with other races can you call the race other than pure? For all practical purposes, as business beekeepers, I cannot be far out of the way in considering the race pure. When you come to very nice distinctions I am not posted.

ANSWERS BY DR. TINKER.

Italian bees may not be properly termed hybrids although they do not breed to a uniform type. A trace of black blood runs all through the race, and a very black bee can be reared from the best strains in the space of three or four years. These are the facts and they can be demonstrated.

ANSWERS BY G. W. DEMAREE.

The Italian bee is not a hybrid in the common meaning of that term among American beekeepers. The Italian is a "thoroughbred;" not a mere cross between just two races or varieties of bees, as is the common hybrid. The Italians are not a pure race in the sense of unmixed blood, but they are *pure* in the sense in which the word is used when applied to "thoroughbred stock." The Italians are a type of bees, the result of a cross of quite a number of types or races of bees, and for this reason I value them most highly, because it makes it possible to breed them by selection, in great variety.

The querist wants facts, not theory, and I shall give him facts. Some years ago I purchased a flock of ewes to rear some lambs. They were all pure white sheep as to appearance and I put a pure white buck with them. Well, when the lambs came, there was one jet black lamb among them. When I say that my flock of ewes had a taint of black blood, do I speak mere theory? You say no; because the black lamb was an outcropping from a taint of black blood in the veins of its mother, and we have a fact.

Now if we breed from imported Italian queens and discover outcropping in their progeny of three or four distinct types of bees, do not we have the proof — the facts — not theory —that there is amalgamation of blood in the parent bees to correspond with the outcropping specimens. Here we get facts by deduction as reliable as if laid down in history.

It should be borne in mind that the process by which the Italian bee has been made what it is, has been going on for perhaps, a thousand years. In my library, I have an old work written some two hundred years ago, in which there is a des-

cription of bees, which evidently identifies the Italian race of bees.

The Italian being a "thoroughbred," that is, a cross between several races of bees, of a thousand years' duration (and still they "sport") in breeding, how unlikely it is, that a new strain of hybrids could be established in a few years of time.

ANSWER BY C. W. DAYTON.

The Italian may be either a cross or the pure race of different acclimation. It probably was in a pretty early day when bees first emigrated into Italy. They may have been there before its settlement by man. We have no history so ancient. The Italians, Cyprians, Syrians, etc., may all be pure stock and originally the same.

ANSWERS BY J. E. POND.

So far as we have any knowledge, the Italian or Ligurian bee is of a pure race, giving the word pure its generally accepted definition. Whether or not is originated in a cross is wholly a matter of conjecture; if so, its formation was the work of centuries ago, and all its characteristics are so fixed that they are duplicated with absolute certainty; and further, those characteristics are so firmly fixed that they show themselves the stronger when the Italian is cross-mated with other races. This fact alone ought to be sufficient proof; but the markings that always exist, and are the accepted proofs of purity, add sufficiently to the evidence as above, to render it certain that today the Italian is a pure race.

THE POLLEN THEORY.
SUGAR STORES.

Query No. 17. If the so-called "pollen theory" is correct, why should there be any winter losses? that is, why should not the total exclusion of natural stores both of honey and pollen, and the sufficient supply of sugar for winter food, prevent all loss during any winter, no matter how severe or long protracted? R. B.

ANSWERS BY JAMES HEDDON.

In response to query No. 17, I will say, simply because bee diarrhæa is not the only cause of bees dying in the winter. If the querist will chemically analyze the diarrhetic excreta from bees, he will find it pollen first and pollen last and pollen all the time and every time.

I prepared a lot of colonies just as above described, and during the cold winter of two years ago, numerous colonies left outdoors, froze to death, but none showed any signs of fecal accumulations. Seventy colonies so prepared and somewhat protected, came through in fine condition, and when they first flew on April 17, after confinement of 151 days, they voided nothing and their bodies were apparently as slim as in autumn.

While I believe that bees can be practically successfully wintered in most instances and locations, with natural stores and proper temperature, I further believe that, if properly-prepared, cane sugar syrup is the only bee-food within the hive, that this, in connection with proper temperature, renders our certainty as great or greater than that of wintering our horses and cows.

For some reason unknown to me, our sugars of late years are bound to crystallize in the comb, notwithstanding the more than usual amount of tartaric acid added. Several have reported loss from this cause, and it is a fact that bees readily starve when the syrup crystallizes.

I thank the querist for prefixing "so-called" to the term pollen theory, for I think it is no longer a theory, but a demonstrable fact, that the winter consumption of pollen, either in the form of bee-bread or floating in the honey, is the direct cause of fecal accumulation in bees.

BREEDING BEES FOR QUALITY.

REPLY TO O. O. POPPLETON.

On page 51, Mr. Poppleton dissents from my theory, which accounts for the fact that no races of bees, crossed together, produce an offspring almost universally more belligerent than either parent race in its purity,—I affirm that it is not true; that nearly all angry bees become so before taking wing from their combs. Suppose it to be true that bees will leave their combs because of their anger, after that anger reaches a certain degree. If they roll and tumble off the combs, fall into the air (not flat on the ground as Mr. Poppleton infers), if they had any idea of stinging before tumbling into the air, it is now increased.

Perhaps one reason why we look at these things so differently, is because we manage bees very differently. Mr. Poppleton says that "all know how necessary it is that while working among bees our motions should be quiet and deliberate, not quick and jerky, especially while passing our hands over an open hive." Now I am going to state very plainly that here we do not handle bees any such way. The very first thing we do before we make a jar, or incite the bees whatever, is to smoke them quickly but thoroughly; thus having them subdued we *keep* them subdued in the same way and work them rapidly and rather carelessly, which, when done in connection with the smoking above described, simply adds to the causes which completely subdue them and we never have any bees standing around on the tops of the frames or some other good place watching for a tender spot on our nose, and we accomplish our work in the least possible time and close the hive, and we think we need fear no competition from honey produced by any beekeeper who carefully and cautiously moves about his work. I again repeat that, when properly done, quick, energetic, executive movements add to the complete conquering of bees, rather than irritating them. Walk cautiously up to a hive and kick it two or three times and what is the result? Stings by the hundred. First subdue it with smoke and then do the kicking and the result is you have thus added to the subjection of the bees.

Mr. Poppleton's last proposition for a test is unfair and irrelevant. In both cases, the bees are irritated and brushed into the air; and the Italians, being ugliest by nature, will sting worst. An ugly bee may sit on a comb and have thoughts of leaving it to sting you, but if such a bee instinctively clings to the comb, there is an attraction the other way, also, and he will not go as soon as he would if that attraction did not exist.

I believe beekeepers will agree with me that when German bees begin to roll and tumble off the combs into the air, is the time to begin to look for stings.

If my theory isn't correct, what one is?

I have not for years read anything so astounding as Mr. Swinson's article on page 51 wherein he informs us that in the south Italian and German bees exactly reverse their habits as known in the north as regards clogging the brood-combs with honey and swarming. It must be that this reversed peculiarity is confined to Mr. Swinson's locality, or at least a few localities in the south; for, during the past eighteen years of discussions regarding the characteristics of the two races, during which time the Italians have been charged with the clogging and swarming fault, over and over again, and the Germans as often praised for their meritorious conduct in this respect,

I do not now remember of any southern beekeepers rising and declaring that it didn't work that way in the south. There have been a few who haven't noticed that Italian bees are bad on this account, but it has turned out that they were not looking hard enough to see it.

Dowagiac, Mich.

EXTRACTING FROM SECTIONS.

Query No. 18. When extracting unfinished sections are they not liable to break loose, and how can we best avoid it? Should we extract them separately or by the frame full? O. U. N.

ANSWERS BY IRA BARBER.

In answer to this query will say that I have no trouble in extracting honey from partly filled sections and leave the combs as sound as when put into the extractor. The sections are nearly filled with foundation before given to the bees, and they seldom fail to fasten them on all sides, so if they are reasonably swarm when put into the extractor, as they should be, there is no need of handling them rough enough to break a single one in the extractor that I use.

I use the Stanley extractor and have frames to put the sections in, which makes the work far less than it would be to extract each section separately.

If unfinished sections are not allowed to stand until the weather gets so cool as to crack the combs, I see no reason why any one should be troubled with breaking out combs when extracting honey from sections.

DeKalb Junction, N. Y.

INVERTING BROOD-FRAMES.

Query No. 19. When inverting brood-frames of the L. pattern or section, are they not liable to lop over to one side, especially in warm weather, unless wired in, or otherwise supported? S. D.

ANSWERS BY C. C. MILLER.

I have had no experience in the matter of inverting except a very little with combs that could not lop, but I should certainly expect that such brood-combs in Langstroth frames as were not wired, or had no special pains taken to fasten them in the frames at the lower part, would lop over badly on being inverted in warm weather (and I think inverting is very little practised at any other time). The newer the comb, the more readily it would bend over.

There would be less danger in the case of sections and I have inverted them without any such result. In fact, I should expect no lopping over of sections unless they were inverted before much honey was stored in them. Bees can easily be induced to build comb up hill, and in a space as small as a section I should expect no bending over.

Marengo, Ill.

BEES BALLING THEIR QUEEN.

Query No. 20. When queens are balled are they always killed unless rescued? Do not the workers sometimes ball their queens to protect them from some fancied danger and in due time allow them liberty unharmed? S. S. C.

ANSWER BY PROF. COOK.

It is impossible to give a definite answer to Query No. 20. I have known bees to ball a queen repeatedly, and in a short time would find the queen outside of the hive dead. This has happened so often in my experiments that I had supposed formerly that the balling was a sure sign of enmity and as sure destruction to the queen. But within the last few years, as I have reported in some of the papers, I have known queens to be balled, and though left undisturbed in the

hive, in a few days' examination showed the queens alive and well, and busy performing their important duties. Of course we might speculate, as one of our leading American beekeepers has lately done in a leading paper in reference to the queens compelling the workers to make worker comb, but in these days of scientific accuracy, speculation or mere theorizing goes for very little. We might wonder if the bees did not cluster about the new queen with murderous intent, and upon further consideration become smitten with remorse and so let her ladyship go free. We might wonder, too, if some of the bee community were not of generous mold, and fearing harm for the queen took her into their loving embrace and sometimes embraced too hard, and so killed the one they would protect. All this is but theory, and until we know, we better say we only know the facts, and will not venture to explain the whys. Were I to guess, I should suggest that the bees flocked around the queen with fell purpose, and upon further consideration gave up their murderous intent and adopted as general mother her whom they would have destroyed.

Agricultural College, Mich.

CHANGING QUEENS AT SWARMING TIME.

Query No. 21. In swarming season, by means of the drone and queen trap, while the bees are in the air, and queen in the trap, could I not change the queens? Would the bees accept a queen at such a time?

JAS. A. RUSSELL.

ANSWERS BY HENRY ALLEY.

We never tried such an experiment but once and that was a success. Our method was as follows: After the new swarm had been hived we took a notion to test the matter of introducing a fertile queen to the parent stock. Having a black queen at hand just at that time (we would not risk introducing a valuable queen by such a plan) we caged her and placed food such as is used in shipping queens by mail in such a way that the bees could remove it and release the queen. The cage was placed over the combs and except to see that the queen was released no further trouble was taken for ten days. The combs were then examined and we found that the bees had released and accepted the queen, destroyed the queen-cells and had gone to work, just as though no swarm had issued. A queen may be thus introduced five times out of ten.

We generally have no trouble in compelling bees to do just as we want them to do except at swarming time, or rather when they swarm, and at such times they are bound to have their own way.

We do not think a queen would be accepted by the bees left in the hive after a swarm has issued, that is, they would kill one if permitted to run in at the entrance while the bees are in the air. Under such circumstances the bees would know that a strange queen was an intruder and would at once ball and sting her to death.

We know of no one who has thoroughly tested introducing queens at swarming time, therefore we have answered the question.

The drone and queen-trap will give you perfect control of the queen and swarm, but has nothing to do with introducing queens.

REVERSIBLE HIVES.

Gonzales, Cal.
Dec. 6, 1886.

FRIEND ALLEY:

I have noted with interest your descriptions of the "Bay State Reversible Hive" and compared it with those of Shuck and Heddon. The need of such a hive is much felt, though whether

such need is practical and well-founded remains to be seen by actual use of the hives. Being strongly predisposed to favor J. M. Shuck's invention and yet well impressed with yours, I wish you to answer the following questions on points most of which seem to be objections(all but questions 1, 6, and 7 which are merely of detail):

1. Do the end-bars project three-eighths of an inch above and below to make standings, or are frames square cornered and resting on supports?

2 (*a*) As the frames (closed-end) necessarily lack the convenient lateral movement of Shuck's hive, is it not difficult to remove interior frames when bees have built bridge-combs joining two together, such needing to be pried apart before they can be lifted out? (*b*). Don't close-fitting end-bars themselves make removal more difficult by friction?

3. You say "frames can be removed without crushing bees." Can they be replaced without crushing bees? Will not the bees crowd over the end-bars and necessarily be killed on frame being replaced and end-bars being brought together?

4. To a man with from three to four hundred up to seven or eight hundred hives of bees with supers for extracted honey, who must extract from the greatest number possible per day in order to get around, could you recommend the "Bay State" to admit of as much expedition as the ordinary Langstroth hive and super? How much comparative delay at each hive would the operator experience, first, in having to unscrew and again screw up the thumb screws of the bolts, and second, from friction in lifting out and replacing the closed-end frames?

5. Do the bolts in section-cases through the middle, pass right in centre of surplus-chamber and hence through the middle of the combs?

6. Have you a lifting device to facilitate reversal?

7. Are end-bars 1½ inches wide and top and bottom-bars ⅞ inches wide?

Assuring you that these questions are prompted by interest, and hoping you will kindly answer early,

I remain yours, truly,

A. NORTON.

ANSWERS BY HENRY ALLEY.

If none of the readers of the APICULTURIST understand the workings of the "Bay State Reversible Hive" better than Mr. Norton they cannot be blamed for making inquiries.

We will answer these seven questions as briefly as possible and at the same time try to give the desired information.

1. No, the end bars do not project ⅜ of an inch at either end to make "standings." These bars project a little less than ⅜ of an inch, or just a bee-space is left between the top-bar and the sections above. Under the frame, that is, between the bottom-bar and bottom-board, there is a space of about an inch. This allows free circulation of air both summer and winter, and it is a most important feature in any style hive. To give this space, there are strips of wood ¾ of an inch thick nailed to the top side of the bottom-board upon which the frames rest. We have tested this new bottom-board on forty-three hives this past winter with perfect satisfaction and success.

2. (*a*) The frames are easily given a lateral movement. Loosen the thumb-screws and more than one inch of spare room may be had in which to operate the frames. You are mistaken about Shuck's hive having a lateral movement to the frames. The Shuck frames are spaced by pieces of wood between each two frames, unless we are greatly mistaken and it is impossible to move them laterally unless one frame is first taken from the hive. There is no difficulty at all in removing a frame from the B. S. hive. The bees should not be permitted to build brace or bridge combs between the bars. About the time the bees are getting ready to do so, place some sections on the hive and contract the entrance in order to raise and to retain the warmth, and thus compel the bees to enter the sections and build combs in them. No prying apart is necessary, except in the fall when

the propolis has hardened. Then no more prying is necessary than is required to remove any hanging frame. (*b*) No, why should they? Have your frames sawed so nicely that there are no joints that will need to be glued up by the bees. Then, again, when the frames are set together by the thumb-nuts and bolts, the joints are so close that water cannot pass through them.

3. Yes, we say frames can be removed and *replaced* without killing even one bee. We can open ten of the B. S. hives and not kill as many bees as almost any person will in opening and removing the frames from a standard L. hive. The bees will, of course, crowd over the end bars, but we do not jam the frames in. When a frame is removed it is lifted out the same as a hanging frame is and when replaced it is pushed down into position and guided to the right place by the frames on either side. There is no danger of killing any bees till the end-bar nearly touches the rest on which the frame stands. Just before letting the frame down to the bearing see that no bees are in the way, then let it drop into place, one end at a time, and no bees will be crushed, and the time required for removing and replacing a frame is about ten seconds.

No one would think of removing the side-board to the brood-chamber in order to remove the frames. Always lift them out and replace the same way.

4. Yes, we can and do recommend the B. S. Hive for any and all uses for which a hive is intended. As an extracting hive the reversible upper-story has no equal, as the frames are easily and quickly removed and replaced. There is no delay whatever in removing and turning up the thumb-nuts, and when they are once again properly set all the frames and combs are firmly held in position and will stay so.

We can remove the frames and replace them with less smoke than is required to do the same work with a common frame hive, simply because the removing of the combs can be done so easily that the bees are not irritated at all.

5. Bless your soul, no! We almost want to ask the querist if he thinks we are a subject for some lunatic asylum.

There is but one bolt in a case holding twenty-four sections, and that runs through wood and not through the honey.

6. The only lifting device is our two hands. We have no trouble in reversing the brood-chamber easily and quickly when necessary. We like the arrangement of Mr. Shuck for lifting his hives when reversing.

7. The end-bars are $1\frac{1}{2}$ inches wide, the top and bottom-bars should be one inch wide. We have used our hives without less space between the combs for many years with success. Some prefer less space, but it is more of a matter of opinion and fancy than one of practicability.

EDITORIAL, ETC.

Some People have an idea that they only have a right to publish a bee journal. We are sorry to know that anybody has even intimated that one man has not as good a right to publish a paper as another.

We would not say one word against such an enterprise; but rather encourage all who think they can publish a bee journal, and make it a success, to test the matter for themselves. Brother Hodgdon, way down in Maine, has tried the experiment to his satisfaction, and now another man has taken the "Maine Bee Journal," given it a new name, and reduced the price from 50 cents per year to 30 cents per year.

Right here, a conundrum strikes us. It is this: How can any man expect to publish a paper at 30 cents per annum, when it could not be done successfully at 50 cents per year? Will some one solve the problem? One more query

in this connection. Last fall we read a lively editorial in a certain publication devoted to bee culture words very much like these: "We are doing finely; subscriptions are coming in rapidly, etc., etc." Presto! change. When the next number of that paper came to our office, we saw, in its editorial columns, something like this: "On Jan 1, 1887, the subscription price of the —— will be reduced from $1.00 to 25 cents per year.

The question is this: If that publication was doing half as well as the proprietors stated, why did they reduce the subscription figures seventy-five per cent? Draw your own conclusions, dear readers, we have no comments to make. No doubt the parties who run that cheap bee paper really supposed that all other bee journals would have to go under as the twenty-five-cent publication would sweep the board. Time will tell, or has told, whether it will or not.

Editor Newman intimates in pretty strong terms that some of those who subscribe for the cheap bee publications will lose the money they invest. No one will lose much at the price some of them can be had for.

While we are not opposed to new bee papers, we do predict that twenty-five-cent bee journals must go under, and the fact is as plain to every thoughtful person as anything can well be. Everybody knows that no decent bee journal can long run at twenty-five cents per year. As a rule such cheap literature is merely an advertising sheet for those who publish it.

The APICULTURIST will keep on its course and maintain its reputation as the best bee journal published in the English language, and further more, we really believe that the "Api" is the only paper devoted to bee culture that is paying its running expenses, a fact that speaks well for our journal. We are doing very well, as our subscription list is slowly but surely growing larger each month. We acknowledge that we are not supported as well as we should be, but in this respect our condition is the same as all the other bee journals.

A beekeeper in Pennsylvania wrote to the "Api," a few days ago, about thus: "No bee journals are taken here. Beekeepers say that there is not enough in them to pay for taking them." "When ignorance is bliss, etc." There are lots of people in this world who want and expect to get two dollars for every one they put out. Now we contend that there is not a bee journal published, not even a twenty-five-cent one, that does not contain information in the course of the year that is worth twenty-five dollars to any beekeeper. The one article in the March number of the "Api" by Mr. Doolittle is worth ten dollars to any person who has ten or more hives of bees.

Now, friends, after reading this, if you think you can publish a bee journal and make a success of it, go in and spend a few thousand dollars, and you not only will be poorer in the end but wiser for having tried the experiment.

Note the Change.— Our readers, and especially those who think the proprietor of a bee journal has no right to advertise the goods he deals in in his own paper, will notice that all our own "ads" have disappeared from the columns of the "Apiculturist."

We have made this change not wholly to appease the parties above referred to, but to give our subscribers from two to four more pages of reading matter each month. Unless advertisements compel us to use some portion of the four extra pages, which have been occupied by our advertisements the "Api" in future will contain twenty-eight pages devoted to general articles, editorial notes, etc.

Our own advertisements, price-list, etc., will be sent out in the APICULTURIST EXTRAS which will also contain the eleven essays on "How to winter bees" by the best apiculturist writers in the world. As we shall send 10,000 copies of the *extra* to people who have sent their address for sample copies, advertisers will find the extra Apiculturist one of the *best* advertising mediums. We have the names of 50,000 beekeepers to whom the extra will be sent in the course of the season.

Please forward copy at once as the first edition will be mailed April 1.

A Law suit has just been decided against a beekeeper in Canada. It seems that a man who keeps an apiary was annoyed by a neighbor who persisted in maintaining a nuisance in the shape of a pig-sty—to the utter disgust of the entire neighborhood. A row was the result, and then a law suit. The lower court decided, and unjustly, too, that the owner of the apiary must remove his bees beyond the town limits. This same thing was tried in Wenham twenty years ago, but it did not work well. They have a queer way of interpreting laws and treaties in Canada—as evidenced by the fishery question, for instance.

A French Beekeeper has conducted experiments which have demonstrated the fact that it requires but six to eight pounds of honey to produce one pound of wax.

That Chromo sent us by J. H Martin represents a funny scene such as many beekeepers have witnessed. Send for it and have one good laugh when you see it.

Mr. Thos. Horn (a name very familiar to the readers of "Gleanings") has advertised in some of the papers that he would pay freight or express charges on supplies ordered of him. Some sixty-two persons now have reason to regret that they did not order their goods of some reliable dealer and pay freight and express charges themselves. This reminds us that this same Thos. Horn ordered some traps of us in 1886 to be sent C. O. D. The traps were sent, and although Horn was in and out of the express office every day, and was informed that his goods were in the office, he wrote us that they had not arrived. Well, the result was we had the express charges, amounting to $2.50, to pay when they were returned.

This same Horn is a man who cannot speak the truth at all times. He was informed by some of his neighbors that they were purchasing queens of us. He told said neighbors that they would get *his* strain as we had ordered 25 queens of him.

We never had any dealings with this Horn, except as stated in the beginning of this item.

Vinegar of the finest quality is now made from honey by Mr. Chas. Muth of Cincinnati, Ohio. We will copy his method from one of our exchanges for the May issue.

Last Season there was considerable delay in filling orders sent to this office for goods. The fact that the firm of P. H. Morant & Co. were novices at the bee business and also the fact that such a large demand for supplies was far beyond their expectation were the two principal reasons why orders were held so long.

We now have a full supply of all the goods we advertise and there will be no delay in filling orders for anything found in our price-list.

No matter where you obtain your goods; order early. Don't wait. Delays are dangerous as many who keep bees have found to their sorrow.

Artificial Pollen.— If an apiary is so situated that bees cannot obtain natural pollen early as is needed, a substitute should be furnished them. We have found that wheat-flour is the best. This may be supplied them according to directions given in the essay found on another page of this issue.

Contract the entrance to the hive to about three inches for the large colonies, and about half as much for the weaker colonies. Cover the tops of the frames with heat-retaining material. Old woollen-garments, carpeting and the like are best.

Seed Catalogues.— About all who keep bees use more or less garden seed. We have on our desk several very nice catalogues. One from G. C. Vaughn, 42 La Salle St., Chicago, containing 72 three-column pages very profusely illustrated; the other is from James Vick, Seedsman, Rochester, N. Y., and contains 176 pages fully illustrated. We understand that these catalogues can be had free by all who will apply for them.

Please do not send to this office any more money for Aspinwall & Treadwell's bee journal. That firm has refused to send their paper to an old subscriber who sent his subscription to us to be forwarded to them, therefore, under the circumstances, we cannot receive further subscriptions for that paper.

The subscriber to whom they refuse to send their paper is well known to us and is good for all his bills; but as he has been confined to the house all winter and more or less for some three or four years by sickness, there would seem to be good and sufficient reason why he has not forwarded the one dollar. Doubtless Messrs. A. & T. were not knowing to these facts.

GLEANINGS FROM CORRESPONDENCE.

West New Brighton, N. Y.

MR. ALLEY:

If our subscription has expired, by all means let us know and we will forward the money immediately as we

can ill afford to be without the "Apiculturist."

Let me thank you for the two beautiful Italian queens which you sent us last summer. They seemed very small when we received them, but the change in a few days after introducing them was wonderful. They began to develop and went to work in earnest so that by fall both of them were my pride and everybody's that knew anything about bees. C. A. DEROCHE.

Milledgeville, Ill.

DEAR SIR: In last "Api," under "Gleanings from Correspondents" I am made to say I have been a beekeeper for eight years. It should read twenty-eight years. For the past nineteen years, I have given the business my best efforts. As it stood at eight years, it would not harmonize with my circular statements. Our bees are wintering well so far.

Yours,

F. A. SNELL.

New Rochelle, N. Y.

Your queen and drone-trap received, also the *January* number of your journal, you must have forgotten February. Please send it soon, for though I take two others, I am very anxious to get my favorite journal on beekeeping.

Yours truly,

Miss R. MARAGHANO.

Corning, Iowa.

MR. ALLEY.

I have received three numbers of the "Api" and find it to be filled with advice for the beginner in bee business by experienced men at the business. Herewith I send a few questions that I wish to see answered in your paper. I have been well pleased to see several questions answered in "Api" that I have often wished to know something about.

JAS. A. RUSSELL.

DeKalb Junction, N. Y.

Bees quiet and in fine condition. But little snow in this section and the outlook for clover is anything but good. Nothing but the most favorable weather in March and April can save it. The ground has been bare of snow, or nearly so, half the time this winter, and is frozen to a great depth. Thawing days and freezing nights will use up the clover, I fear.

IRA BARBER.

Stratford, Can.

ED. AM. "API":

I now have 4 vols. of the Apiculturist uniformly bound and consider them a valuable acquisition of bee lore. Hoping that in the years to come it may outstrip even its splendid record.

I remain, yours truly,

E. W. PANTON.

Thorn Hill, N. Y.

MR. H. ALLEY:—

I am surprised to see how rapidly the "Api" is improving. I thought it was as good as it could be, but it is beating itself every issue. Every beepaper on this side of the Atlantic visits our office regularly, and none is more welcome than the "Apiculturist." C. M. G.

BEE JOURNALS.

Burlington, Iowa.

DEAR SIR: Herewith find 25 cts. for the "Apiculturist" on a three months trial trip. The trouble with our western bee-papers is they are published in the interests of supply dealers. I want to find something better.

H. S.

[We entered this person's name on our list and will send him the "Api" for three months. We fear, however, that in dropping the western bee-papers for the reasons he mentions and taking the "Api" "in hopes of finding something better," that he has only "jumped from the frying pan into the fire."

We take occasion to inform Mr. S. and others of like opinion concerning bee publications and the supply business, that no bee journal can exist for any length of time unless backed by some business (or an inherited fortune), and, even then, there is very little profit in it, as there is so much competition in the bee supply business that goods of all kinds are sold at ruinous prices.]

A NEW STRAIN OF ITALIAN BEES.

For many years we have tried to develop a strain of Italian bees that would winter on the summer stand when properly protected. To develop such a desirable characteristic, in any race of bees, has required very careful breeding and many years of constant experimenting. We are now ready to announce to our readers that the one object so long sought has at last been realized.

The readers of the APICULTURIST will probably remember the account given in the August number, 1887, of a queen bee that went on a lark from our apiary but returned in the course of a few days. That particular queen was of more value to us as a "breeder," than was even hinted at in the account referred to. We think, however, that it was stated sometime last year that one of her good points was her *wintering* qualities. This queen brought her colony through the winter of 1885–6 very strong and healthy, with no dead bees nor mouldy combs, the only perfect colony out of fifty-nine Mr. Locke placed in a cellar. Well, it occurred to us that we had at last found in these bees what we had long desired and aimed for; namely, hardiness and first-class wintering qualities. Last season there were reared in the Bay State apiary nearly 800 of as fine young queens from this mother in question, as any beekeeper ever saw. The queens are very large, handsome and unusually prolific, and the worker progeny as fine honey-gatherers as one could really expect bees to be.

We have wintered in our outdoor apiary about twenty queens reared from this mother. These colonies have been carefully watched to see how they would winter and the result noted every week since Dec. 1, 1886. At no time has there been over three dead bees on the bottom-board or about the hive. About some other colonies we have side by side with these we would find from thirty to one hundred dead bees about the hives each week.

To-day (Feb. 21) I made an examination of the hives and found more dead bees in front of one colony of some other strain than about all of the twenty hives in which we have these queens.

There is another point about this new strain and it is this: our bees have had two days since Dec. 1, when they could take a flight; one was Jan. 23, and the other Feb. 17. While the bees in all of the hives except the twenty referred to were flying by eleven o'clock, none of the colonies of this particular strain had shown a bee until nearly two o'clock, P.M., and some had not started then. I began to think that the colonies were dead as they were so slow to take wing, but found on examination that they all were alive and in fine condition. They did not care to fly at all, and I believe that they could have endured confinement from Dec. 1 to April 1, and still go through the winter in good condition. These two points are very desirable in any race or strain of bees. We have discarded all races but the pure Italian bees, and only queens of the strain described will be tolerated in the Bay State Apiary in future.

HOW TO GROW BASSWOOD TREES.

Corning, Iowa.

Will basswood sprouts grow? If not, how is the best way to get a start of that wonderful honey-plant? There is none at all very near my location, but plenty of it at a distance of three miles. How far do bees go in search of honey?

JAS. A. RUSSELL.

[Who will answer? ED.]

WIRE-CLOTH SEPARATORS.

Some one has patented a section-case having wire-cloth separators. As the question of this new material for such a purpose is being discussed, it may be of interest to the readers of the "Api" to know the opinion of some prominent beekeepers on this point as given in the "Api", May issue, 1885.

The question by Mr. William Stephan was as follows:

"What is the reason why wire-netting cannot be or is not used for separators? We used it last year in six hives and found it a success; it is cheaper than perforated metal and does not warp like the wooden ones."

ANSWER BY L. C. ROOT.

I prefer wood separators from the fact that they stay in their proper place best and are more even and smooth. The bees are less liable to build comb fast to them, and my experience is that the honey presents a better appearance than when built with any kind of perforated separators. Besides, wood is cheapest.

ANSWER BY J. E. POND.

Wire-netting can be used for separators; the objection is that it is so flexible that the face of the capped combs will not present that smooth, even and regular appearance, so desired and desirable.

ANSWER BY P. H. ELWOOD.

Costs more and will not keep its shape as well as wood. Besides, is colder.

ANSWER BY G. W. DEMAREE.

It can be used; but I object to it on account of its flimsy character. When propolized to the sections it pulls out of shape in getting it loose, and when it gets daubed up with propolis, etc., it is next to impossible to scrape it off.

ANSWER BY E. E. HASTY.

Probably a suspicion that wire-netting might prove bothersome by ravelling or otherwise, and present loose ends of wire to perforate the honey, prevents it being more generally tried.

CLOVER-SEED.

WHEN AND HOW TO SOW.

As this is the time of year when every beekeeper begins to inquire, "What shall I sow or plant for bee pasture?" I will try to give you a few pointers. I recommend clover. It is the greatest honey-plant of America, and alsike stands at the head. We don't half appreciate it.

We should sow it everywhere — sow it on the roadside where the teams have cut up the sod, to keep out of the mud; sow it where the pigs have rooted up the sod in the orchard or pasture; give the boy a pocketful when he goes fishing, and tell him to scatter some wherever he sees a piece of bare ground on the creek-bank; put an underdrain in the cat-swamp, and sow some there; burn up all the brush-piles and old stumps, and sow alsike in the ashes. Remember that it makes the best pasture and hay of any plant that grows. Don't forget to mix a little white clover with it. They grow well together, and, at the price it is selling now, it is the cheapest grass-seed in the market.

PEAVINE CLOVER.

This, as a honey-crop, comes the last of July and the early part of August, just the time when we need it most. It is the great crop to reclaim worn-out or poor land. There is no clay land too poor to raise a good crop of it. With 150 or 200 lbs. of good phosphate or bone-meal per acre, you are very sure of getting a good seed of

clover after oats, on the poorest clay soil, and you will get oats enough at 25 cents per bushel to pay for your fertilizer, and get your clover-crop extra. If you have corn-stubble on last year's sod-ground you will get a better clover meadow by cultivating it with a disk or Acme harrow, or a two-horse cultivator, and drilling oats both ways, than to plow the ground. I have tried it by plowing every other narrow land, and I get the best meadow every time where the old sod is left down. If you wish to raise seed, you must save the first crop of peavine or alsike.

[*Gleanings in Bee Culture*, Feb. 21, 1887.]

THE DOUBLE-GEARED, REVERSIBLE, LOOSE HANDLED, BACK ACTION OCCUPATION.

Bradford, Iowa.

I don't know what your subscription list is, but I know the contents of your Journal are worthy of no small number of subscribers. If the beekeepers do not rally to the vigorous support of one bee paper and that a clean and healthy one, they are, indeed, a weakly tribe: are following a calling that is unworthy the "hue and cry" it receives in the shape of conventions, supply dealers and patent-hive men.

There has been talk in some of the papers about an association for beekeepers. The first and almost only fact for consideration of its feasibility is that beekeepers are producers much like the farmer, whom to unite or associate would be comparable to the bringing together of the two poles of the earth. If outsiders did not get in to kick it over they would be sure to kick it over themselves. Comparatively, farmers do not associate; they will not, and are a class that would not if they could. To be sure, the former is independent. If he bites the hook he is easily gobbled up. They say he should not bite but he always does. The only way out is not to be a farmer and the same is true with the beekeeper. At the great convention held at Detroit some-time since I learn that of the hundreds present only eleven followed beekeeping specially. A great (?) industry was represented. This shows how the industry called apiculture hangs on to something else. "What the Lion leaves the Wolf devours." I don't think apiculture ought to be the strongest industry but it ought to be respectable enough to reject and have not much use for second-hand material. Let us have apicultural in the place of apiculturistical conventions.

If we get rid of those fruit, chicken and cow beekeepers, those doctors, lawyers and preachers, associations may then be organized and its members will take an interest in it. This dealing with half a man is not the best thing out. He is two-sided at least.

C. W. DAYTON.

FEEDING SUGAR SYRUP TO BEES TO STORE IN SECTIONS.

Shrewsbury, Pa.

MR. HENRY ALLEY:

In my locality bees can gather very little honey. If I buy sugar by the barrel and feed it to my bees and sell the honey, can I make a profit on the sugar and is there sale for such honey?

Respectfully,
E. D. C.

[No, you cannot feed sugar to bees and sell it at a profit, even should they store it in sections, which is a thing no one can get bees to do unless they are experts at the bee business. Should the bees store the syrup in sections it would not be honey, it would still be sugar syrup. For your own reputation and that of the beekeeping fraternity generally do not think of practising such a deception as that upon an unsuspecting public.]

BEEKEEPERS' CONVENTION.

ANNUAL MEETING AT ANDOVER, OHIO, JAN. 19 — OFFICERS CHOSEN.

The Northeastern Ohio, Northwestern Pennsylvania and Western New York Beekeepers' Association met in Convention in Opera Hall, Andover, Ohio, at 2 o'clock P. M., on the 19th inst., president

C. H. Coon in the chair. The convention lasted two days—19th and 20th—but owing to the bad condition of the roads the attendance was not as large as when the convention was held in Meadville a year ago.

The election of officers for the ensuing year followed next. D. Videto, of Northeast, Erie county, Pa., was elected president; P. F. Twitchell, Andover, O., vice president; C. H. Coon, New Lyme, O., secretary, and Geo. Spitler, Mosiertown, Pa., treasurer. Meadville was selected as the place for the next meeting of the convention—January, 1888. Geo. Spitler, E. A. Reynolds and D. H. Lefever of Crawford county were appointed a local committee.

The meeting was one of much interest, and good will result to those engaged in producing honey. There were many fixtures on exhibition, some of which if adopted would prove a benefit.

NEW ADVERTISEMENT.

4,103 lbs.

of Honey gathered by 40 Colonies

IN 7 DAYS.

We have purchased L. C. Root's celebrated breeding stock which, together with our own, gives us the choicest collection of Italian bees in the world, and one that has the

Best Honey Producing Record Extant.

We will spare a few full colonies and nuclei containing some very choice breeding queens of this stock. We make a specialty of rearing ONLY FIRST-CLASS ITALIAN BEES AND QUEENS at the

KNICKERBOCKER BEE FARM.

G. H. Knickerbocker, Proprietor. S. M. Locke, Manager. Our circular for 1887 contains an important letter (regarding these bees) from L. C. Root, that every beekeeper should read.

Send for it before ordering queens elsewhere.

Address KNICKERBOCKER BEE FARM,
Pine Plains, Duchess Co., N. Y.

ADVERTISEMENTS.

Advertisements of responsible parties only will be admitted to our columns. If any are found otherwise, we should like to be informed of the fact and will discontinue such advertisements.

Rates for Advertising.

All advertisements will be inserted at the rate of 10 cents per line, Nonpareil space, each insertion; 12 lines of Nonpareil space make 1 inch. Discounts will be made as follows:

On 10 lines and upward, 3 insertions, 5 per cent; 6 insertions, 10 per cent; 9 insertions, 15 per cent; 12 insertions, 20 per cent; 24 insertions, 25 per cent.

On one-half column and upwards, 1 insertion, 5 per cent; 3 insertions, 10 per cent; 6 insertions, 15 per cent; 9 insertions, 20 per cent; 12 insertions, 25 per cent; 24 insertions, 33⅓ per cent.

On whole column and upward, 1 insertion, 10 per cent; 3 insertions, 15 per cent; 6 insertions, 20 per cent; 9 insertions, 25 per cent; 12 insertions, 33⅓ per cent; 24 insertions, 40 per cent.

On whole page, 1 insertion, 15 per cent; 3 insertions, 20 per cent; 6 insertions, 25 per cent; 9 insertions, 30 per cent; 12 insertions, 40 per cent; 24 insertions, 50 per cent.

An additional discount of 10 per cent, where *electrotypes are furnished.*

1887 SMITH'S 1887

Wholesale and Retail Bee Hive Factory

Sections, Hives, Smokers, etc.

1¼ story Langstroth Hives, with ten brood frames, as low as 63c. 2 story Langstroth Hives with ten brood-frames, 80c. each.

PRICE LIST FREE TO ALL.

SMITH & SMITH.
4-87-tf. *Kenton, Ohio.*

A GREAT SCHEME!

Can We Sell Honey to the Millions?

Investigate our new, peculiar 5 ct. package for extracted honey. *Eaten from the hand without knife, spoon or stick as cleanly as to bite an apple.* The first and only cheap successful package ever invented. We also have the *first chromo card especially for beekeepers.* Bees, implements, etc., elegantly printed in eight colors. A big move to extend reputation. Italian Queens, Splendid Foundation, Bees in Heddon Hives for sale, and all represented on our card. Circulars and card, giving full information free. Package of cards, 10 cts. Sample honey package filled with honey, mailed for 12 cts. Now is the time to look these things up for the coming season.

Address,

J. H. MARTIN,
4-87-tf. *Hartford, N. Y.*

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., MAY 1, 1887. No. 5.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt delivery. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

THE AMERICAN APICULTURIST is not a local paper. Its circulation extends into every state in the Union and largely in the western and middle states. We also have a good number of subscribers in Canada, and our foreign circulation equals that of any American bee paper. The Api is as much a national paper as any bee journal published.

For the American Apiculturist.

HONEY PRODUCING AS A BUSINESS, ETC.

G. W. DEMAREE.

I was gratified to see that so prominent an apiarist and apicultural writer as Dr. C. C. Miller has not been carried away by the great number of articles that have been published of late urging beekeepers to repeat the folly of producers in other branches of agriculture; that is, organize in a clannish way to force consumers to pay more than the market price for their products. In this way I said that nothing can, or ought to be done.

The rights of the consumers must be respected when it comes to taking the advantage of the times and circumstances. When the supply is below the demand the producers hold for a stiff price, and they do not fail to get it, and when the supply is above the demand it is the consumer's turn to reap the benefits. Suppose consumers should band together to obtain your produce at figures less than the market price (when I say market price, I mean the price resulting from the amount of produce on hand, and the demand for it for consumption) would you not resent it as little less than robbery? You see the boot is on the other foot this time. I think that Dr. Miller might have gone farther and said that beekeepers if in solid mass meeting, would quarrel and separate without agreeing upon a fixed price. There are beekeepers now in the United States who get 25 cents per pound for their honey; do you suppose these are going to take less as long as the demand justifies it? I am now selling liquid honey, granulated, at 12½ cents in my home market, when I could not get the half of it in Cincinnati. Does this not show that our honey market is undeveloped, and that the city markets do not govern the price of honey, because honey is not quoted along with groceries generally? If this ever takes place, so that honey is as prominent as other articles in the grocery line, then honey will likely take a rise in the cities, and the price will go down in the rural districts.

Perhaps the time will come when honey will be quoted along with other groceries, and travelling mercantile agents will carry honey everywhere in their schedule of articles, and the people will become posted as to the price of honey. This would make the price of honey much the same everywhere, as is the case with other groceries.

Some people imagine that because great railroad corporations, iron dealers, millers, etc., can force artificial prices for their products, honey producers can do the same. They forget that these gigantic concerns are in the hands of comparatively few in number, who can be wielded as one man, and with their combined wealth they are able to do anything but shut the portals of the heavens.

The very nature of the agricultural business precludes any such power in combination. Perhaps people who depend on the city markets might be benefited by knowing the supply on hand as suggested by Dr. Miller, but it would do me, and I guess many others, no good. Just let the berry crop fail and I will sell all my honey at good prices. You see the point: we must have *demand* for our produce or it will not sell, whether we have much or little on hand.

Men, like the bees, are creatures of habit, and we can habituate our neighbors to the use of honey, and we may spread out business till we find sale for all the honey we can produce. The whole country is before us and unoccupied except a few cities that have been overworked. Permit me to say here that any man who expects to get rich by selling a few pounds of honey at an extravagant price will fail at anything he goes at. Such men as Messrs. Forncrook and Hatch of Wisconsin have become well off by producing honey cheaply, and turning it into money at prices that consumers can afford to pay for it. Such men succeed because they have the pluck to work and wait.

Christiansburg, Ky.

QUEEN CELLS: HOW TO CARE FOR THEM AT SWARMING TIME.

Macedon, N. Y.

AMERICAN APICULTURIST:

Mr. G. M. Doolittle in reply to A. T. Trowbridge's question on page 56 in March number of "Apiculturist" tells very clearly and satisfactorily how *he* manages his bees at swarming time.

Now, some of the beekeepers who do not *rear queens* and who consequently have no young queens to put into the old hives, would be very glad to have him tell *them* what is the best way for them to manage at such times.

A. J. W.

ANSWER BY G. M. DOOLITTLE.

Well, A. J. W., this is just what I would do if I were in the place of those "beekeepers who do not "*rear queens*;" by a little coaxing, by means of stimulation, by feeding, spreading of the brood, or better still, by giving brood from other colonies, I would get the colony having my best queen to swarm a week or so in advance of the rest. Having done this I would hive the swarm on a new stand leaving the old hive undisturbed for eight days, during which time or previous I would procure, by making or otherwise, one of Henry Alley's queen nurseries. At the end of the eight days (by which time the first young queen will be hatched), I would open the hive and cut out all the queen cells in the hive, fitting them in the cages according to directions in Alley's queen book. You will want to put each cell in a cage as fast as cut out; for doubtless several will be ready to hatch at once. If you do not find that any queen has hatched, of course a cell is to be left to furnish a queen to the old

colony; but in nineteen cases out of twenty the first swarm of the season issues with the sealing of the first queen cell so that the first young queen hatches seven days afterward. If there is any danger of the colonies destroying the cells and giving up casting a second swarm on account of bad weather, etc., either feed them a little, or cut off all cells but one in six days after the swarm issues. However, if you are not used to this work the nearer mature the queen cells are, the better success you will have. Having the cells in the cages, hang it (the nursery) in the centre of some colony of bees, near by (when you will have queens in it good for using) as I gave on page 56, for the next eight or ten days. As the queens will not probably all hatch at once you can use the oldest first and so on. I do not like to use a virgin queen over seven days old for this purpose, but they may be as good older. Who can tell us about this? Queens generally commence to lay at from seven to ten days old, and if kept in a nursery till older so that they cannot be fertilized till from twelve to eighteen days old, will they prove good? [Yes.—EDITOR.]

Before the nursery-full of queens from the first colony is used up, save cells from some other colony as you did before and so on through the season as long as wanted. In this way, you are not raising queens (only allowing the bees to carry out what they started to) properly speaking, yet are accomplishing just what you want, and beside getting an experience of much value to you. Now, if you do not wish to do as above, the only thing left is to purchase queens or let the bees have their own way, neither of which is as good or as profitable as the first in my opinion.

Borodino, N. Y.

For the American Apiculturist.

LETTER FROM MRS. H. HILLS.

La Petite has been my neighbor, ever since she was a "wee mite of a tot," and a charming neighbor she has been. I always envied La Mère her possession, and finally fell to thinking how I might entice this fair maid into beekeeping, and thus secure more of her society.

Circumstances favored, La Petite's school-days having lately closed; so a year ago, when I was moving my bees from the cellar, she appeared on the scene, followed by Philander with the wheelbarrow, and took home as fine a colony as I had in the cellar. Then opened up a charming period of running back and forth from her apiary to mine, until swarming time, when each became more strictly confined to her own premises.

It was interesting to see how rapidly the deft fingers of La Petite accustomed themselves to the new business of wiring frames, cutting and fitting foundation, arranging surplus cases, and all the rest. As to the bees themselves, hardly anyone could be expected to get to like them as I do: but she soon became quite friendly with them, and looked forward to swarming day, with all the eager interest of the unitiated. Finally, one hot afternoon (May 29), the ever-smiling — this time, slightly excited— face of La Mère, suddenly greeted me, above the fence of the apiary, and a slightly nervous voice quietly informed me, that the bees had been accidentally discovered clustered in an immense swarm, on the grape arbor, and that it was altogether uncertain how long they had remained there; also that *pater familias* had been telephoned for, and in the uncertainty as to his exact whereabouts, my com-

pany would be acceptable. Leaving Starrie to watch the apiary, I was soon on the ground, and if ever I enjoyed any one event more than another, it was certainly the assisting to hive that swarm of bees. They behaved beautifully, and I was just familiar enough with the work, to understand perfectly well how to handle them, but not familiar enough, to make the hiving of a swarm, an old story. La Petite had given them a nice, sheltered, sunny corner, and they had thriven remarkably under her care. She seemed very proud of her new colony, and finally decided to allow a second to issue. A third, and, I think a fourth came out and were returned.

By this time, my own apiary was wide awake with swarms, and I seldom visited La Petite. She became proficient enough to hive and return the later swarms, with the assistance of La Mère, and finally to cut the queen cells. From the prime swarm and the old colony, she took 125 pounds of surplus, in one-pound sections; and in November, placed three colonies in winter quarters.

Sheboygan Falls, Wisconsin.

For the American Apiculturist.

HIVES I HAVE USED.

W. F. CLARKE.

I respond to Mr. A. Norton's request on page 54 of the March issue of the AMERICAN APICULTURIST, and cheerfully give my experience with different styles of hives. This I do, mainly to set the ball rolling, for I think, with him, a friendly discussion on this topic likely to do good, and I think, with you, that a perfect hive has never been invented. Perhaps it never will be, but I believe we shall yet approximate more closely to perfection in this matter, and what more likely to bring this about, than a comparison of the defects and excellences.

THE THOMAS HIVE.

This was the first I tried, and for its day and generation it was an excellent hive. It was in the spring of 1864 that I began its use, and I continued using it for several years, meantime trying some others. The objections to it were its large size, great depth, complicated swivel cleats at each end of the top-bars, and non-adaptation to raising comb honey.

THE MITCHELL HIVE.

Not the American of that name, but a Canadian, S. H. Mitchell of St. Mary's, Ont. The frames were shaped thus:—

They were very large, did not balance well, and the hive had most of the same objections as the Thomas.

THE AMERICAN HIVE.

Too large, not convenient for opening and handling, and the outer case slipping down over all; objectionable.

THE QUINBY HIVE.

Too large, too clumsy; too heavy to move around; with a boiling-over full stock of bees, hard to close up without killing some; difficult job for me to fix up all serene after opening out; and, withal, too costly.

THE JONES HIVE.

A simple, cheap, handy, common-sense hive, but too deep to suit my taste, which has always,

and I think always will run in the direction of preferring to raise comb honey.

The Langstroth Hive.

I was almost ready to cry "Eureka!" when I first got hold of the Langstroth hive. Frames not too deep; easily handled, held, turned and looked over; shallow enough to secure a yield of surplus honey on top; cheap, easily put together, and with portico, very neat. I have used several styles of Langstroth, and will briefly give my views concerning them.

Simplicity.

A good hive having much to recommend it, but two frames too large, and the bevelled edge a decided objection.

Root's Chaff Hive.

Very pretty, liked to see it on any lawn, but in this rigorous climate not an infallible winter hive. In the working season, the high walls were sadly in the way of the elbows in handling frames. Moreover, too costly, except for a lawn ornament.

The Falcon Hive.

This hive is the best of the chaff Langstroths that I know of. It is easily handled by means of one side being removable. It is held firmly in place by neat clamps. I like to handle bees in this hive, and when I exhibit an interior to visitors, this is the one I prefer to open. The peculiar arrangement seems to excite the bees very little, and they settle down into quietness at once when you get through. I consider this a splendid hive for amateurs, but it is rather costly for a working apiary. It is also too large, being a ten-frame hive. But I use two dummies in mine, which makes it better for wintering. There is a paper lining which is a good non-conductor, and my bees have wintered better in this than in any other hive for "all the year round" that I have tried.

The Chautauqua Hive.

This is made by the same manufacturer as the preceding one, with a view to cheapening cost. I think it is an equally good wintering hive, but I have only had trial of it this winter, which is not quite over. It is open, however, to the same objection as the Root Chaff hive, the high walls are in the way of the elbows, when handling frames.

The Lake Hive.

Another form of Langstroth with some advantages about it, but rather heavy and costly, and not protected enough for a Canadian winter. I should think it an excellent hive for the south where it it made, and chiefly used.

The Heddon Langstroth.

This pleases me better than any of the Langstroths I have tried. Its chief defect is the fixed bottom-board, and this is needed properly to stiffen the body of the hive, though I have made some that have stood usage well with a movable bottom-board. This hive is light to handle, easy to make, cheap, neat in appearance, convenient for putting into the cellar, and the most convenient I know of for chaff-packing out-of-doors.

The New Heddon Hive.

I am supposed by many to have this hive on the brain, but I haven't. So far, I prefer it above any I have tried yet. It gives complete control of the bees, enables you to perform all operations on the double quick, exposes you less to stings, and is the best I know of for getting the most comb honey.

Other Hives.

There are many other hives before the beekeeping public, some of which I would like to try, but it is such a nuisance to have several sizes of frames in one's apiary, that I have about concluded to try no more. Still, if a hive-maker sends me a hive with the polite request that I will try it, how can I well refuse? I wish a museum could be got up containing all hives in use by good practical beekeepers, and that I could have about a month quietly to inspect, and compare them, putting down every point of excellence, and trying to combine all in one.

The Hive I want.

Perhaps my hive ideal is utopian, but such as it is, here it is.

1. One that I can make myself, and I am not by any means a "boss mechanic."
2. One in which it is necessary to disturb the brood-nest little or none.
3. One light to handle.
4. One large enough to give off rousing big swarms, and yet not so large as to store a needless quantity of winter supplies.
5. One in which a colony must store surplus honey when it is to be had in the fields.
6. One equally good for summer and winter.
7. One requiring the least possible attention at the change of seasons.

I do not use the extractor, hence do not want a hive especially adapted to it. If some one were to poke me up to do so, I might perhaps tell why; but it would be apt to stir up a hornet's nest.

Guelph, Ont.

[Wonder if the B. S. Hive would not suit Mr. Clark? It just fills the bill for "The Hive I want." Some one ought to stir up a hornet's nest if it will be the means of preventing the general use of the extractor as in our opinion the extractor is the cause of low prices for honey.]

For the American Apiculturist.

REPLY TO MR. HEDDON.

A. L. Swinson.

On pages 93 and 94 of the "Api," Mr. Jas. Heddon in his reply to Mr. O. O. Poppleton, acknowledges quite an astonishment on my article on page 51. (?) He says "that this reversed peculiarity is confined to Mr. S's locality [probably], or at least a few localities in the south; for during the past eighteen years of discussions regarding the characteristics of the two races, during which time the Italians have been charged with the clogging and swarming fault, over and over again, and the Germans as often praised for their meritorious conduct in this respect [never from any southern breeder of *practical* experience, though], I do not now remember of any southern beekeeper rising and declaring that it did'nt work that way in the south. There have been a few who haven't noticed that Italian bees are bad on this account, but it turned out they were not looking hard enough to see it:" (How do you know *that?*)

I don't think that it is confined to any particular locality in the south, certainly *not* to a few localities only. As to Mr. Heddon not remembering of any "southern beekeeper rising and declaring that it did'nt work that way in the south" ("during the past eighteen years"), there have *never* been, until four or five years past, but *very few* Italian bees ever kept in the south *eastern* part of the south, and even now when introduced here they are *Italian* but a very *short* time with but a few exceptional cases. Consequently but few men in the *south* have Italian bees and therefore not competent to pass on their qualities; even in

many cases when they do so, it is nothing more or less than *hybrids* that they are classing as pure Italian bees. This *peculiarity* is not alone confined to southern beekeepers, but is as often applicable to northern and western beekeepers and more so, compared to the number there are in the two different localities who claim to have pure Italian bees.

I think Mr. Heddon's pet (?) hybrids are and according to his own classing of them, well worthy to go along with his Revolutionary Hive (?) and better suited to his own purposes than to those of any other person.

Goldsboro, Wayne Co., N. C.

For the American Apiculturist.

NOTES FROM ENGLAND.

SAMUEL SIMMINS.

In your comments upon Mr. S. Cushman's review of my pamphlet, you state that there are many points upon which you do not agree with myself. Well, sir, that is as it should be, and I am glad to know that it is so. How little progress would be made in this world did we all think alike; in fact we should have come to a "dead lock" long since. Nevertheless, I earnestly hope that any difference of opinion among ourselves may not be the result of any misunderstanding or prejudice; but rather let it be caused by varying experiences carried out upon different lines, and so resulting in conclusions being drawn by each, according to his own capabilities, his surroundings, or powers of observation.

PREVENTION OF SWARMING.

Here, allow me to say you have somehow got upon the wrong track. You consider that I "prevent swarming by *often* removing some of the combs near the entrance of the hive, and *compelling* the bees to fill the space with new combs." The fact is that the beekeeper's skill is shown, not by often meddling with the stock chamber, but by managing that the bees are kept so busy in the sections above that the combs between brood-nest and entrance are *never* finished. At the same time having in mind the many long hives in use in this country, with our small standard frame, it will be found on referring to my pamphlet, p. 12, that I state, "if the bees are kept busy in the sections, very little comb will be built in the empty frames at front." At the same time I add this caution, "on no account should any of such be allowed to become fully worked out." I am quite aware that the small empty frames on the same level as the brood-nest, would be more likely to get filled than deeper frames so arranged, or any frames where the whole set with starters can be worked *under* the brood nest.

For the treatment of hives such as are in general use in America, turn to p. 15. There you will observe that the empty chamber is to be placed under the brood-nest before the bees get the desire to swarm, and then "as soon as the weather is favorable, put on sections all filled with new combs; remove as fast as completed, add others, and the *lower combs will not be completed all the season.*" Yes, sir, this is solid fact, as proved by my own experience and that of many others who have given their unsolicited testimony in favor of the plan.

Your largest producers of extracted honey will tell you they have little difficulty in preventing the issue of swarms, by giving the bees plenty of store combs in advance. By so doing they have been

able to get along with little trouble in that direction, but I have yet to see that anyone has explained the true reason. The fact is, without knowing why, they have managed to keep the swarming fever in check. In a future paper I may go over the whole ground, but in the meantime the matter might be passed through the query department, something in this form. "Why are bees little inclined to swarm when an unlimited number of store combs are given them for the purpose of obtaining extracted honey?" Now please do not say without further consideration that the question answers itself; because as a matter of fact it does not.

INVERSION.

Well sir, you do surprise me when you say, "The idea that bees will cut a passage way along the bottom-bar when combs are reversed, is most absurd." Surely I have not been blind, for it is a thing I have noticed over and over again. A few years since I was using a frame 16″×10″. Then came the British Standard 14″× 8½″, and having a large trade in bees and queens I was obliged to adopt the latter size and you can imagine how beautifully those large combs could be made to fit into the smaller frame, close to the wood all round so that no tying was needed. But, alas! at this day I can find hardly one which has not been either cut clear away from the thin bottom rail or touching it along less than one-third of its length. Combs used for storage during the honey season only would not of course be treated as above; but it is the brood-nest that we have been advised to invert, and it is the combs of that part of the hive which sooner or later will be cut away from the bottom rail. The thicker and broader your rail the more often will it be done. My own used in transferring were ⅛′ thick and ¾″. As a rule I use no bottom rail with our "Standard" frame.

DRY SUGAR FEEDING.

You are right: my experience does differ widely from all who had (not "have") tried it in America, as well as in England. You say "It has been found that a large percentage of sugar fed dry will be removed by the bees." As practised hitherto by others such had been the case. Herein is where I differ, and if you will just imagine a soft, moist sugar with the finest grain possible, you will see how readily such can be pressed into one solid mass which the bees are continually licking, while all the time there are no loose grains that they can carry out. In fact, with my original dummy-feeder, which is not more than one inch wide inside, every particle of sugar is cleared up being kept down by the bees all the time in a compact body under a high temperature. This is the only kind of feeding that I can rely upon to produce new combs or for drawing out sheets of foundation rapidly before the season opens.

Another frame feeder I use holds nine or ten lbs. at a time, is three inches wide, with an arched bottom of finely perforated tin, under which the bees cluster and reduce the sugar with no waste whatever. In this case, the weight of the sugar keeps the lower surface tight upon the perforated plate, always within reach of the bees. Either feeder will be found of immense value in the queen-rearing apiary; placed at one side filled with the *right kind* of sugar, the owner need have little anxiety about his nuclei in the way of feeding. If intended to be stored as a winter food, the only kind of raw sugar I have found suitable is that known as Porto Rico; but for continuous supply while bees can fly freely

for queen-rearing purposes, almost any raw sugar will do.

EGGS.

You consider "The fact that any worker egg will produce a queen when the larva is properly nursed, and also that queen cells are built directly upon the side of a comb," upsets my theory. "During swarming time the combs are loaded with brood, pollen and honey, and the queen is hard pushed for room in which to deposit eggs, etc." Why, sir, we are entirely agreed about every word of this if you will only say "cells may be" instead of "are built upon the sides of a comb; because I find it to be the rule for them to be built around the edges of a comb during the swarming impulse. Where do we differ? when you admit that the queen lays the eggs directly into the queen cups; therefore, three kinds, queen worker and drone eggs respectively. At the same time I have not the slightest intention of saying that a worker egg will not give a queen, as that would be quite contrary to my own experience. All I wish to show is that each is deposited with the distinct understanding that it shall develop into an insect having very different functions to either of the others.

QUEEN INTRODUCTION.

Without being too critical, I am sure Mr. Cushman will allow me to correct him upon one or two points. For instance, mentioning one method of direct introduction followed by myself he gives one part of much importance. "The queen is first kept warm, and alone without food for thirty minutes," but he omits the grand point, which is to "insert the queen under a quilt after darkness has set in." Daylight, or even twilight will not do; whereas the former time takes the bees at a complete disadvantage. Indeed, one of our noted beekeepers, well known to yourselves, says that the bees are simply "fooled" by this plan. It provides for every condition that can be named, whether the stock has been long queenless or only recently made so.

INTRODUCING TO CONFINED BEES.

My first notice of this was given in the *American Bee Journal* several years since. I had long made a practice of making up small lots of bees to send away with newly arrived queens; and being placed with the strangers at the moment of closing the package none of the queens were ever molested. This saved me much time in place of preliminary introduction, and I then resolved to adopt the same for ordinary use in the apiary. For this purpose I believe that eminent writer, Mr. G. M. Doolittle, first shakes the bees into a box without combs, gives them the queen and in due course puts the bees back on to combs again to form his nucleus.

This appears all too much labor to me and I could not afford the time to do it. My own plan is simply to make up a three-frame nucleus of brood, combs and bees, shaking none whatever from their combs. Give plenty of ventilation in dark, cool room, insert the queen, and on the third day there is your nucleus ready to stand anywhere you desire, while in the meantime the queen has laid many eggs. Receiving as I do, as many as twenty-five to thirty imported queens at a time, they are very soon placed in comfortable quarters in this manner. They are given a fair chance without being overworked and are ready for customers without having interfered with queens presiding over flourishing colonies.

"THE AMERICAN APICULTURIST."

And last, but by no means least, there is this valuable publication to speak of. To say that it not only stands in the first rank, but is equal to any of the most prominent bee periodicals, is but a simple statement of truth. The first number sent me gratuitously gave the impression that it was to be a thing of sterling worth, and I am glad to see that the paper keeps up the high-class style it started with. I am more than pleased with the two volumes bound in one book, sent me, according to order, a few months since.

Rottingdean, Brighton, England.

For the American Apiculturist.

THE COMING SEASON, BEE-HIVES, ETC.

E. W. ALEXANDER.

As we are now on the eve of another season of hard toil with our bees, let us see if we cannot shun some of the ruts of ignorance we have as beekeepers so often dropped into. First, which will it be this season, extracted honey at five cents or comb honey at about nine cents per pound? I don't think the large producers who have to send their honey to commission men will realize much better prices than the above. Now, in order to pay expenses at such prices, we must look close to our business. As the day is now past when slack, shiftless management will pay expenses, it becomes necessary for us to bring more practical knowledge to bear on our business, and the present prices make it a sharp race for success, which must decide who the producers will be in the future. As in my experience in the business for the last twenty-five years I have quite often encountered heavy losses, I feel it my duty to warn some of the inexperienced to go slowly and carefully, and here let me say there is some of the best advice given to beekeepers in the AM. APICULTURIST that I have ever seen in print. It seems to have an unlimited number of practical apiarists as its contributors, who have placed it in the front ranks of American bee literature, and as they help their brother man to shun some of the ruts of ignorance, that so many of us have lost our hard-earned dollars in, they cannot help but feeling rich in doing good, if not in dollars made from the sale of their honey.

As the most practical form of a hive, all things considered, is still a question which a large number of beginners are anxious to see discussed, I will give my preference in as few words as possible; and here I will say I have no interest whatever, in any patent connected with beekeeping, and that I have tried almost all kinds of hives imaginable, in handling an average of 200 stocks a year for the past fifteen or twenty years, during which time I think I have made some mistakes as great as most any beekeeper. In regard to the best size and shape of hive, I prefer one like the following: made of good pine lumber planed to $\frac{7}{8}$ in. thick, 10 in. deep, adapted to the hanging frame; 9 in. deep in the clear, and long enough to take frames about 13 in. inside measure, and wide enough to hold nine of these frames, a little scant $1\frac{1}{2}$ in. from centre to centre, with one or more clamps the same size as the hive, except the depth, to set on top for sections, and a close-fitting division-board to be used when rearing queens. Now give this hive a flat, water-tight cover that can be made fast or loose in a mo-

ment, and a bottom-board flush with the hive all round, also a $\frac{3}{8}$ in. entrance extending across the front of the hive at the bottom. This has proved with me to be the most practical hive I have ever used. Having used over 100 Langstroth and as many Quinby hives for several years, I have discarded them on account, principally, of their long, unnatural-shaped brood-nest, and, as for a hive with any side-box arrangement, I consider them a thing of the past.

With due respect for all who differ with me on these principal points of our business, I leave these unconnected remarks to be criticised by all.

Esperance, N. Y.

For the American Apiculturist.

A FEW QUERIES.

J. E. POND.

MR. EDITOR:

Have you not made a mistake in Bro. Heddon's answer to question No. 16? It nowhere touches the point, and is not at all relevant. If a mistake has been made it should be rectified.

BLACK BEES FROM PURE ITALIAN QUEENS.

Will Dr. Tinker demonstrate the matter that he says is a fact, viz.: "that a very black bee can be raised from the very best strains of pure Italians, in the space of three or four years." Both you and myself, Mr. Editor, have reason to believe no such demonstration can be made, as we both had directly the contrary experience. I assume that Dr. Tinker's "facts" must be demonstrated with pure Italians, so kept that there can be no possible admixture with any other race, otherwise there would be no demonstration.

I will give the Dr. $1.00 each for every very black worker he will produce to me reared under the above conditions, and will give him six or eight years instead of three or four in which to do it. Facts, not theories, were called for in query 16; now give us the proofs Dr., if you can.

In answer to query 17, Bro. Heddon replies that "bee diarrhœa is not the only cause of bees dying in winter," all of which is very true as a matter of generalization; but it does not touch the vital point of the question, as is shown in the third paragraph of answer, where he says "properly prepared cane sugar . . . in connection with proper temperature renders our certainty" (meaning of safe wintering) "as *great* as or *greater*" (italics mine) "than that of wintering our horses and cows," viz., absolutely certain. Then he speaks of the uncertainty of sugar and its liability to crystallize, etc.

Now, my own experience has been that bees properly prepared will winter safely on summer stands no matter how severe the winter; the matter of food, if the same is pure, making no difference, and that pure natural stores both of honey and pollen, if there is honey enough to subsist on, is equally as safe as prepared sugar syrup, and safer when its liability to crystallize is considered. In other words, I believe that the measure of safety will be found in proper preparation.

Foxboro, March 25, 1887.

For the American Apiculturist.

DEAD BEES IN THE CELLAR.

WILL M. KELLOGG.

I have had many years' experience in wintering bees in cellars, so will give my answer. I have at present

(March 20) 54 stocks of bees in our cellar. I could probably sweep up three pecks of dead bees from the floor, yet my stocks are strong, healthy, and in good condition. We must remember that bees go on dying in winter, as well as in summer, though not to so great an extent: but in winter every dead bee shows, while in summer, few are seen of the thousands that die. The peck of bees from 36 stocks in nine weeks is nothing unusual and need occasion no alarm. The temperature, 48° is all right. My bees have been in the cellar over sixteen weeks.

Oneida, Ill.

For the American Apiculturist.

THE CARNIOLANS.

C. L. FISHER.

I received the March number of the APICULTURIST and was much pleased with its contents, with one exception. In the department of "Questions and Answers," Query No. 14, second question, which calls for a description of the Carniolan bees, their good and bad qualities, etc., in justice to that superior race of bees and to the few men that are breeding and introducing them, I would criticise the answer by Dr. Tinker. In his answer he says the Carniolans are hardly distinguishable from the common black bee; if that is the color of the Carniolans as Mr. Tinker knows them, then either he or I have never seen them in their purity. As I know them, they bear no more resemblance to the common black bee than do the Italians; and in size, the fertile queens are a very little longer than the blacks but perhaps no larger round, and the drones are as large as any I have ever reared. Dr. Tinker says the race is, no doubt, a cross between the common black and Cyprian races, but he didn't quote any authority to back the statement. I give the following reasons why I very much doubt Dr. Tinker's statement:

The disposition of the Carniolans is much milder than that of either the blacks or Cyprians; and then the Cyprians, as I am informed, are gatherers of propolis, as also are the blacks, while the Carniolans are not. As to their honey-gathering qualities, the Carniolans stand first in my yard, and I have had them side by side with Italians, blacks and their crosses. They are better nurse bees than the Italians, hence much better for cell building. I fully agree with Brother Tinker that they are excessive breeders, long-lived and hardy. They enter the sections readily and cap their honey snowy white and they don't bother me about swarming, but perhaps they would if I let them follow their own inclinations.

In conclusion, I will say my original stock was imported, and I have no idea that a person as well informed in apiculture as the one who shipped the queens to me, would waste his time on an ordinary hybrid race of bees.

So. Deerfield, Mass.

[We think it is quite evident that Mr. Fisher never saw a pure Carniolan bee. We were the first to import this new race, and we find that Dr. Tinker gave a good description of them and we agree with the Dr. in all his statements but the point regarding the originality of the Carniolans. We do not think they are a hybrid variety, as the queens we imported did not produce one bee that showed any yellow bands. Their color was an iron-gray; but as the bees grew older, the white hairs came off and they resembled the common black bees. Don't take too much stock, my friend, in imported queens.]

For the American Apiculturist.

VENTILATION OR NO VENTILATION.

C. W. DAYTON.

As I advised in the November number of last year, I prepared for winter 112 colonies by removing everything from the brood-chambers but the quilts and then covered the hive with leaves and then with dirt.

In that article it was directed to leave a space of the leaves at the top of the mound uncovered with the earth and also provide an entrance to the outside air. I did more than I advised as 40 of the colonies were covered entirely with earth so as to stop all upward ventilation (*a la* Tinker). Yesterday, April 3, the 112 colonies were examined and I will herewith give the report for that apiary. The bees were confined without a flight just 150 days; not on account of the leaves or dirt, but because they were located in the northern part of Iowa.

Of the forty colonies none survived—all are dead. It is death with a vengeance. I believe there have not been live bees in many of them for months. Some of them left the honey almost untouched—none of them consumed one-half of it. Of the remaining seventy-two, five or six in bad order and three are dead outright, one of which starved. Of the sixty-four good colonies many are very strong and reminded me of swarming time when taking their flight. This is only another of the dozen times I have wasted a large share of an apiary by experimenting on ventilation. Every time I have "paid the fiddler." Now that I realize the loss and the circumstances by which I tried the experiment, I wonder if I was not crazy last fall.

I found some of the combs that contained no honey that were so loaded with condensed moisture as to be as heavy as a comb of honey. The cells were entirely filled.

The bees in the "chaff hive apiary" have wintered without loss.

Those in the cellar at the "home" apiary all appear to be in good order except two which have dwindled some.

Bradford, Iowa.

HOW TO GROW BASSWOOD TREES.

Corning, Iowa.

Will basswood sprouts grow? If not, what is the best way to get a start of that wonderful honey-plant? There is none at all very near my location, but plenty of it at a distance of three miles. How far do bees go in search of honey?

JAS. A. RUSSELL.

HOW FAR WILL BEES FLY IN SEARCH OF FORAGE?

ANSWERS BY A. E. MANUM.

I have never had any experience in growing basswood trees from the seed, nor from very young sprouts. We have basswood in abundance here, growing on our mountains and wooded ridges, hence it is not usually thought necessary to plant any. Though I have transplanted young trees along the roadside the whole width of my farm for shade, ornament and use, I have had no difficulty in making every tree grow. I go where young basswoods are plentiful and take up trees of a uniform size, say about 2½ to 3 inches through; these are usually very tall. I cut off the top, leaving nothing but a stub with roots. This stub I aim to have about 12 feet long. I take pains in setting out and then bank up around it with *hard* wood shavings, sawdust, chip-dirt or any substance that will hold moisture.

In this way I have set out a nice lot of them and have never lost a tree. I have no doubt but young sprouts one or two years old might be successfully transplanted if care

is taken to keep the ground around them moist. — Your correspondent asks "How far will bees go in search of honey?" That is a question I cannot answer. I have known my bees to go seven miles, but how much farther they went I cannot say. Several years ago, when I first got my Italians, the first in this vicinity, they were discovered by a party of bee hunters seven miles from my apiary; they caught a few, thinking they were "a new race of wild bees," as the hunters afterward told me, and set them at work and lined them to my apiary. I was not at home at the time, and one of the party being well acquainted with me took the liberty to open a hive for the purpose of satisfying his curiosity. I have often known my bees to work on basswood five miles away, but of course the gain in honey was small compared with the gain when they worked nearer home. To illustrate: when basswood near one of my apiaries was at its height two years ago, my scale hive would gain 30 to 33½ lbs. per day; in four days the gain was 123½ lbs. At this time there was plenty of basswood in bloom within one mile of the apiary, and as this gradually passed by they were obliged to go farther off and at the same time the gain correspondingly decreased; until, when the bees were obliged to go five miles away, the gain was but three lbs. per dozen. I have one apiary where there is no great amount of basswood nearer than three miles, yet I usually get a fair crop of basswood honey in that apiary, though their best day two years ago was but 15 lbs. against 33½ in the apiary mentioned above. I keep one colony on scales all through the summer in each yard in order that I may know from day to day what the gain or loss is.

I will state that I am located at the base, and on the west side, of the Green Mountains. The foot hills (so-called) all about me are more or less covered with basswood which blooms some days earlier than that which is on the mountains; hence near the close of the season, when the bees are obliged to go to the top of the mountain to forage, the increase of honey in the hives is much less than when they can get it at a much less distance.

Basswood is the best honey plant we have here and I am sure that were it not for basswood, bee-keeping would not receive much attention in this part of Vermont.

P. S. My experience is that young basswoods are much more sure to live and grow after transplanting than are fruit trees. I find them very hardy.

Bristol, Vt.

For the American Apiculturist.

SPRING MANAGEMENT.

J. E. POND.

Upon the management employed in early spring in the apiary, will depend almost entirely the question of whether we shall gain or lose in the business. One thing we must constantly bear in mind, viz., that we can't obtain a large crop of honey, and a large increase of bees, at the same time, and consequently we must determine early whether it is bees or honey we most desire, as the management for a honey crop is in some respects different from that required for an increase in colonies.

Whichever is worked for, the early management will be the same. To get an increase at the least expense requires a large force of foragers at the exact time when honey can be gathered freely, and not to

have a large force when there is no honey for them to gather. The bees themselves understand this point so well, that they carry on comb-making and brood-rearing simultaneously with honey gathering and cease when honey is no longer found in the fields. There is an exception to this, however, and that is in early spring; then they seem to realize that their depleted forces must be strengthened, and rear brood just so long as any stores are found in the hive, but will continue if fed as long as the feeding is kept up.

To get our colonies up to full strength in time to gather the first secreted nectar, is the point to work for as soon as the weather will admit. On the first day when the bees can fly out safely, the exact condition of each hive should be ascertained, queens supplied, or the means of rearing them given, ample stores for both bees and brood furnished, the hives contracted to suit the size of the colony, all upward ventilation shut off, and the hives well packed so as to retain the heat needed for the maturing brood. It takes twenty-one days from the egg before the worker emerges from the cell, and about fifteen more before it becomes a forager; now if the flora of one's locality is known, it is easy to determine how early brood-rearing should be begun in order that the forager may get the earliest honey crop. One axiom must be remembered here. A large colony will gather far more honey and rear far more bees than will the same if split up into three or four. So care should be taken that colonies do not accumulate so rapidly as to spoil all chance of success. The secret of success lies simply in strong colonies supplied with young and prolific queens.

In building up in spring, if feeding is needed to be done, care should be taken not to feed too rapidly or in too large a quantity. If the hive contains sealed stores, a few cells uncapped each day will be ample; if the stores are minus, only enough should be fed to keep the bees alive and hive work progressing. Too much manipulating at any time is undesirable and in early spring is positively injurious. The young beekeeper for some reason seems to think he must be constantly pulling his hive to pieces, and overhauling the brood-chamber to see if the queen is laying or not. There is no need of a full examination after the first is made, if that was made thoroughly. Having learned the condition of each colony and supplied its wants, there is no further need of overhauling a hive, except to add a frame of brood as needed, where a weak colony is being built up.

It is only by practical experience that much of the knowledge of how to manage in spring is acquired, but the careful study of "Alley's Handy Book," and the articles in the APICULTURIST will aid the beginner amazingly. These hints are not given with the idea that one can learn the business from them, but as a sort of help in the right direction; and if any one is so aided, I shall feel well repaid for giving them.

Foxboro, March 8, 1887.

[The above was intended for the April issue, but came too late.]

WHAT KILLED THE BEES?

Shipley's Point, Mo.

MR. ALLEY:

Please send me the eleven essays on "How to Winter Bees?" I lost one-third of my bees last winter. Some left fifty pounds of honey. Can you give me the reason for it? The bees were on the summer stands, some were in log hives and others on eight-

Langstroth frames. Snow piled up over the entrance.

ALLEN STOKESBURY.

[The snow may have had something to do with killing the bees; think it did in some cases. Other colonies had too much honey, and probably did not have sufficient room for the queen to lay, as the combs were so full of stores; thus the colonies went into winter quarters, weak in numbers, and then the large quantity of honey made the combs colder than ice, and as the bees could not get into a compact cluster, they of course died by freezing. Other colonies may have lost their queens in the fall, and in consequence died, as bees will not winter without a queen.

Read the essays on wintering bees sent you and you probably will have better success in the future.]

THE STANDARD FRAME OF AMERICA.

Woodcock, Pa.

MR. ALLEY:

An editorial may be found in a bee paper published in New York state criticising the *British Bee Journal* for saying the "Langstroth frame is the standard in America, "and the editor also says "the *British Bee Journal* would have come nearer the truth if it had said that there are more American frames in use in America than all other sizes put together." Some of our best authorities say that ninety per cent of the hives in America take the Langstroth frame. What is your opinion in the matter?

My bees are wintering well in chaff-hives on the summer stands. Last year was almost a failure. My bees averaged only thirty-six pounds per colony, spring count, and no increase.

I like the "Api" very much; wish it was a weekly. Yours,

JOHN H. RUPERT.

ANSWER BY HENRY ALLEY.

The *British Bee Journal* is correct and so also are our best authorities regarding the Langstroth frame as being the standard frame of America.

The paper you allude to has tried a good many years to convince the beekeepers of the world that Mr. Langstroth was not the inventor of the movable-comb frame. Every fair-minded person, as also those well-informed in bee matters, well know that to Mr. Langstroth belongs the credit of inventing the movable-comb frame.

A former editor of that New York paper spent thousands of dollars and many months' time in a futile attempt to prove that Mr. L. stole his ideas of the movable-frame; but the said editor lost the money and time spent in investigating the matter, and the more he tried to disprove the fact the stronger he found the evidence that Mr. Langstroth was the original inventor of the movable frame system as applied to beehives.

Finally, Mr. H. A. K. gave up the chase in disgust, and soon thereafter found it convenient to retire to private life or to engage in same other pursuit other than that of an editor of a bee paper.

The "American" frame which Mr. King devised for the sole purpose of evading the Langstroth patent, had no practical merits about it and was little better than the old-style frame used years before.

Mr. King soon found he could not evade the patent claims of Mr. Langstroth, nor could he get around it by the clap-trap arrangement which he called the "American Hive," and when called upon to pay a royalty for infringing upon Mr. L.'s patent, he (King) undertook to invalidate Mr. Langstroth's claims. For this purpose Mr. K. spent much time in visiting Europe and other places in search of evidence that would further his scheme, but the enterprise was unsuccessful, as Mr. Langstroth still held the fort till his patent expired.

At that time Mr. Langstroth also was looking up the evidence Mr. King said he had obtained

here in Essex county, Mass., and we had the pleasure of aiding Mr. Langstroth, and well know that Mr. King found no points here that would in the least benefit him if the case went before a jury.

No doubt when this comes under the eye of our friend who conducts the New York bee paper, he will howl well and think some pretty hard things even if he does not mention them. Nevertheless, the facts, as above stated, will probably not be disproved by any evidence that that paper can produce.

They may bring out their old books and go back to the days of Adam and Eve, but the fact that Mr. L. invented the most practical movable-comb frame will remain all the same.

A few years ago we sent out circulars in order to gather certain data needed. One of the questions was: What kind of hives do you use? Ninety-nine out of every hundred said the "Standard Langstroth."

Several hundred of these circulars were sent out and were addressed to beekeepers in every state in the union.

QUERY DEPARTMENT.

Answers by Practical Apiarists.

BLACK BEES *vs.* THE YELLOW RACES.

Query No. 22. If a queen-breeder should cease to rear the yellow races in preference to the black, would not the former soon become extinct and the latter entirely occupy the field? Certainly the blacks seem to have great staying qualities in the unequal contest. How about the survival of the fittest? READER.

ANSWERS BY R. L. TAYLOR.

Many have expressed more or less astonishment at the fact referred to in the above question, but to my mind if the fact were different the cause for astonishment would be great indeed. If a farmer stall feeds three, say four-year-old, steers apparently equally well he may reasonably indulge a hope, if he feeds them skilfully, that their increase in weight will be nearly equal, because their food is sure and regular, every comfort is attended to, and they are just approaching maturity, the period at which health is the most stable and life the most certain; and yet it would not be wondered at if the farmer finds at last that he has been feeding one of them at a great profit, one at a fair profit and one at a positive loss. Again, let the farmer take cattle well past their prime, when their health and vigor become uncertain, and he would be surprised if they responded equally to food and care.

On the other hand, the prosperity of a colony of bees depends not only on the vigor of the queen, but also upon the food supply and upon what I may call the mental characteristics of the bees — all matters which are beyond "what can be seen," as the phrase is used in the above query. Let us see whether the conditions resulting from a variation in these particulars in different colonies do not abundantly account for all the difference there ever is in the "workings of two colonies" apparently alike in the spring.

1. The bees of different colonies vary greatly in their mental characteristics, and no "stock" has ever yet been so highly bred that great differences in this respect cannot be readily seen as the season progresses. Some colonies want to prolong their winter sleep, others "rise early;" some have a *penchant* for beginning active brood-rearing early, others prefer to delay; some are born economical and are parsimonious of their stores till new food is coming

freely from the fields; others live in the present and trust to the future to supply future wants; some are bent on the multiplication of their race and their minds are absorbed in new homes and "going west;" others keep all their thoughts at a tension on the question of the future food supply. Each of these points is a subject in itself for a long article, but it is not necessary to elaborate them to enable any one at all acquainted with apiculture to see that these differences in their characteristics must make a great difference in their "workings."

2. The food supply — and by that I do not mean the amount in store, but the "increase"—during the spring often varies greatly in colonies standing side by side. One colony finds a better "patch" of willows or maples or hickories than another, and where the amount to be collected is small, so that the gathering is principally done before noon, the colony that bestirs itself earliest in the morning has manifestly a great advantage. Again, one colony may fortunately find and appropriate the stores of a colony that has perished, or may find means of "borrowing" from some weak colony in the neighborhood, and it may be to absorb the weak colony itself; and any of these inequalities in "early" advantages would easily account for a great disparity in results.

3. Finally, in seeking a solution of the problem, it must not be forgotten that the queen bee leaps almost at once to maturity; her prime lasts but a few brief months, which is at best a period of uncertain length, when she enters upon her decline which may be very gradual and prolonged, or rapid with an early termination to her useful services. Indeed, though a prolific queen is generally an advantage, yet she may cease to be prolific at a time when that would prove a great help to her colony so far as the result in surplus is concerned. Suppose the surplus season lasts thirty days, and the queen suddenly loses her vigor at the opening of this season, the saving in food, the reduction in the necessary housework and the consequent large reinforcement of the field workers would make a very favorable, comparative showing in the amount stored; but space forbids details, and these suggestions must suffice.

Lapeer, Mich.

ANSWER BY DR. TINKER.

As the query is stated I should answer yes. If any queen breeder should cease to rear the yellow races and rear only the blacks, the former would soon become extinct in that locality if no other apiaries of the yellow bees were near. The querist evidently wishes to know if a queen breeder had an equal number of colonies of the black and yellow races and should leave all breeding to nature, would not the black race predominate and soon occupy the field? This query must be answered no, if it is meant that all traces of the yellow stock would be eventually obliterated. I dare say that if such a trial was made and the bees were isolated as on an island, that one thousand years would not suffice to obliterate all traces of the yellow stock. There is no doubt, however, that the blacks would almost wholly predominate at the conclusion of such a trial. But the traces of the yellow bees would be still there and manifest in the breeding of queens and in the color of an occasional drone. The Italians are believed by many noted queen breeders to be an impure race, that from the beginning had a trace or admixture of black blood that more

than a thousand years of natural selection have failed to breed out. So much for the staying qualities of the black race. It is vigorous and strong in vitality and the drones are large and active and adepts in the art of wooing young queens, but the black worker is sluggish and indolent as compared with the average yellow worker.

If I am right in the above conclusions, there is little hope of establishing a fixed strain of hybrid bees by natural selection that will duplicate themselves in markings. The intelligent queen breeder, however, has the power to select the drones and queens and to breed to a type in almost any direction, so that what cannot be accomplished in a thousand years of natural selection can be accomplished in less than one man's lifetime through artificial selection. I have proved to my full satisfaction that it is possible to produce a distinct strain or race of bees having definite markings in a reasonable time.

Labor in this direction has been quite limited, but we may expect in the near future great progress in developing new strains of bees as well as in cultivating their most desirable traits. The survival of the fittest will not be left wholly to natural selection, we may be sure; for, in that case, the fittest for the purposes of man may not survive. The use of perforated zinc and drone traps is going to aid us in this work materially.

New Philadelphia, O.

QUEENS BY MAIL. METHODS FOR TREATING THEM WHEN RECEIVED.

Query No. 23. About 25,000 queen-bees are reared and sold in the United States and Canada each year.

Many of those who purchase queens are inexperienced beekeepers and do not understand how to treat a queen in order to preserve her life till she can be introduced.

Please give your method for caring for queens that were shipped by mail as hundreds of beekeepers will appreciate the favor and be greatly benefited thereby. Sometimes queens sent by mail are in bad condition when received. Some are daubed by the food, others are chilled or injured by rough usage. Please consider these points in reply. NOVICE.

ANSWER BY P. R. RUSSELL.

It is true that valuable queens are often received in bad condition from various causes, and it is very important to give them proper treatment as soon as possible after being received.

I have practised the following method with good results. When a queen arrives and is badly daubed with honey, or nearly starved, or chilled, or exhausted or is out of condition from any cause, I allow her attendant bees to escape one by one, by holding my thumb over the hole in the cage; any dead bees are also shaken out. I then take the caged queen out to some hive in the yard and put in about a dozen fresh bees. If bees are getting honey, I prefer to pick them up from the alighting-board as they return from the field. These fresh bees will give the queen proper attention and the cage is then placed in the hive where the queen is to be released in the usual manner. I have never known strange bees to attack or injure a queen when introduced into an ordinary shipping cage, and I do not think they will. In case a queen is chilled, first take them into a warm room and they will often revive, even when apparently dead. In any case, I think it is well to cage her with fresh bees. Try it.

Lynn, Mass.

ANSWER BY J. E. POND.

In this matter I am not posted. I have received but few queens by

mail, comparatively, but the plan I have adopted is simply to set them one side in the shade till I wish to introduce them, if the weather is warm; if cold I put the cage on top the frames of the hive the queen is to be introduced to, and leave her there. I have kept queens in confinement in cages with "Good Candy" for from two to three weeks without trouble. My method of introducing is to remove the old queen about noon of a warm day when the bees are all flying, leave the colony alone till dusk when the bees have all returned; then I either allow the new queen to run in at the entrance, or drop her on top the frames and let her run down. This is done of course only when honey is being gathered freely. When no honey is being gathered I usually remove the old queen, put the new one, cage and all, between the frames; the cages usually used now have a hole in the side plugged with "Good's candy, and the bees in the last mentioned way will liberate the queen by eating out this candy-plugged hole.

Foxboro, Mass.

ANSWER BY WILL M. KELLOGG.

I have had but little loss in queens received. When honey is coming in plentifully, nearly all stocks will feed caged queens, and queenless stocks do not fail to do so. On receipt of the package, if I have a stock that is ready to have a queen introduced, I simply place the cage on top of the brood-frames and cover warm with quilts; then introduce as required. Otherwise, I place the cage under the quilt of some strong stock till I can use the queen. In case the bees are daubed with the food, I change into a clean cage and proceed as before. I sometimes feed the queen first, if she looks dumpish, with a drop of warm honey, which enlivens her.

Oneida, Ill.

ANSWER BY H. ALLEY.

When I have received queens in bad condition, the bees accompanying her are removed, and if the cage is not badly daubed with honey, I introduce about a dozen young bees, not just-hatching bees, but those that are a few days old, as the latter are much better for nursing a queen than younger bees.

If the bees have not a good supply of food, a fresh lot is inserted, and then the cage is placed under the cushion that covers a good strong colony of bees. If possible, so place the cage that the bees in the hive can feed the queen through the wire-cloth, yet cannot have access to the food in the cage.

ANSWERS BY C. W. DAYTON.

I know of no better place to keep a caged queen than in the centre of a strong and queenless colony. When the attendant bees arrive, mostly dead, I substitute very young bees in their places. If the queen was daubed by the food they would remove it as their contact with the queen would have a tendency to better her condition. In no case wou'd I allow an old bee in the cage before it had remained in the colony thirty-six or forty-eight hours.

Anything that would cause the centre of the colony to be very warm would be advisable, and I can recommend nothing better for this than to feed the colony gradually so as to cause the bees to be good-natured and busy. When it was time to release the queen I would aim to do it slyly, unknown to the bees or her majesty. This can be accomplished by arranging a block of honey in the opening of the cage to be removed by the bees. In feeding, great caution should be exercised not to excite robbing as it would make trouble and the chance for safe introduction worse than it would have been had no food been given.

If the shipping cage is daubed, a clean one should be used.

Bradford, Iowa.

FERTILIZATION OF QUEENS IN CONFINEMENT.

Query No. 24. In Vol. II, p. 95, will be found a statement by J. R. Caldwell, Hoopeston, Ill., saying he could mate his stock as he wished in confinement. Has he followed up the plan there described? How many queens can he thus get mated in a season? Has any other of your many readers tried the same and with what results? Judging by my own experiments in this line, extending over a number of years, we have much yet to learn before the matter is reduced to a practical certainty.

S. SIMMONS.

ANSWER BY J. R. CALDWELL.

Sickness has prevented us from further experiments. Our humble opinion is, that there are too many contingencies to warrant a general success of fertilizing queens in confinement.

Hoopeston, Ill.

ANSWER BY J. E. POND.

I have not seen any reports from Mr. Caldwell in relation to his success in the matter. The question of mating queens in confinement has been a matter of study and labor for many years by some of our most scientific beekeepers, but not one of them has as yet met with success. A few reports have been made of individual cases where queens were mated in confinement, but the tests as given are not considered strong enough to warrant the conclusion that any real practical or beneficial results will grow out therefrom.

There are so many chances for mistakes in the matter, that unless successful mating in every instance follows, or in a sufficient number of cases to warrant the finding, that no possible error has been fallen into, that we must go slow in our belief and call for positive proof of the strongest, possible character before we accept the conclusion that queens can be mated as we choose to have them and in confinement.

He who matures a plan by which such mating can be accomplished, will be doing beekeepers an immense benefit and place his own name high up on the roll of apiarian princes.

Foxboro, Mass.

ANSWER BY WILL M. KELLOGG.

I can't say anything as to Mr. Caldwell's work as I know nothing of it. I have tried several of the plans for mating queens in confinement, but with no practical success. I have had *good* success by raising early drones from a favorite queen, by placing drone comb in the centre early and stimulating, raising young queens to be of similar right age (drones about two weeks, young queens four or five days old) then inciting both young queens and drones to fly early in the day by sprinkling both stocks with sweetened water. In this way I get a large per cent mated with the desired drones.

ANSWER BY C. W. DAYTON.

I think the plan mentioned must not have been very advantageous or more would have been said about it. It would have been adopted and advised more.

HOW TO INTRODUCE A QUEEN.

The safest and best method ever tested in the Bay State Apiary for introducing queens, is as follows:

The colony to which a strange queen is to be introduced should remain queenless three days (72 hours). Then the colony should be thoroughly smoked and the queen allowed to run in over the combs during the excitement; or the cage, in which the queen is shipped, may be so placed that the queenless bees can remove the food and release the queen. To do this, turn back the wire-cloth that covers the food, just enough to allow the queen to pass out when the food is removed.

If one of our fumigators, such as we have used for thirty years, is used to fumigate the bees with tobacco smoke, not one queen in one hundred will be lost in introducing, whether the queen be a fertile or an unfertile one. We spend about five minutes in smoking the bees and blow in only a small amount at each puff. Introduce queens just at sundown, as the bees will not rob then, and everything will be all right in the morning.

THE MANAGER'S CORNER.

Must the Extractor go? Some one has suggested, and we think it was Mr. Heddon, that the use of the extractor should be discontinued. This seems to us to be one of the wisest and most important suggestions yet advanced by any one. Looking back some eight or ten years we think the price of honey began to decline as the extractor came into general use.

Messrs. Heddon, Doolittle, Miller and several others have given in the "Api," cases which occurred some eight or ten years ago, when dealers would call at the apiary and pay almost any price for honey and in some instances were ready to bargain for it before the crop was secured, and offer a very high price for it.

Now that most every beekeeper uses an extractor the price of honey is less than one-half what it was ten years ago. Is this not largely, yea, wholly owing to the general use of the extractor?

If this state of things continues not only the extractor must go but the large honey producer also, as he will be compelled to abandon a business at which it is impossible to make both ends meet. We say the large dealer must go, as the large dealer cannot drive the small beekeeper from the business, from the fact that the latter does not give his whole time to the business. Small dealers are farmers, mechanics, professional men and women, therefore they are not wholly dependent upon a crop of honey for an existence. In our opinion the people last mentioned are the only ones who can make beekeeping profitable and successful.

We believe better prices would be realized in less than one year, could the general use of the extractor be discontinued. Is not this the most practical and only remedy?

Another point presents itself here. Cannot honey in the comb be produced at half the cost of time and labor that it can be by the use of the extractor? Is not the experiment worth trying?

We really believe that if the price of honey was not less than twenty-five cents per pound, that much more would be used by families generally. People do not desire and will not purchase cheap luxuries. When they pay a good round price for an article it seems to please them, and they really believe that it is much better than if the price had been less than half they were charged for it. It is so the world over.

We have dealt in fruit some, and when fruit seemed to be scarce and high, everybody wanted it, but when it was cheap and so plentiful as it has been the last two years, nobody wanted it, and I could not even give away some fine pears I had.

Perforated Zinc.— Dr. G. W. Tinker of New Philadelphia, Ohio, has sent to this office a sample of perforated metal made by a machine which he constructed himself.

The sample is very nice, and we should say the metal is as good as that manufactured by any one. In one respect it is better for the drone-traps than that we have been using; in that the perforations or slots, for the bees to pass through, are an eighth of an inch longer than in any metal we have used.

Doctor Tinker says he can make it only seven slots wide at one time, and his machine is only designed to make perforated metal for use in honey-boards

---

Questions and Answers.—The only importance and value any Question and Answer department has is the fact that the questions are answered by well-known and practical men. One of our exchanges has an idea that they have stolen a march on all other bee papers by giving out questions a month ahead and permitting any one who chooses to send in answers.

If they pursue such a course, there will be more confusion and disagreement in the answers than there now is. We guess our young brothers will soon learn by experience what is really needed.

Surplus Swarms.—The best way to manage when one has all the colonies needed is to double up, put two and even more new swarms in one hive, and place the sections on the hive at once.

Last season we had two very large swarms issue at the same time; both were placed in one hive. These two swarms not only filled the brood-nest, but ninety-six one-pound sections, and as some of the cases used had no separators between the sections, more

than 100 pounds of honey were taken from these two new swarms.

Low Prices.—If the people who are manufacturing beekeepers' supplies continue to cut prices as they have in past seasons, the bee business will soon be run into the ground. Hundreds of men have bought a few hives of bees and as soon as they have gained a little knowledge of the bee business, have at once come out with a flashy circular and a big advertisement, offering supplies for sale. The novice is allured into the supply business with the idea that when he enters it he soon will become rich. Poor fellows. It takes but a few months' time to convince all such people of their mistake.

Now, very few people would care about the number who enter the supply business, were it not for the fact that all inexperienced persons commence at the start to cut the prices, thinking by so doing they can steal the trade other parties have already secured by fair dealing and promptness. In this they mistake again.

The large dealer is obliged, on account of so much competition, to reduce his prices, which were already too low, in order to hold his trade.

Mr. A. I. Root set the low-price ball in motion and since he commenced to manufacture goods at such figures as he alone could live upon, the prices of all kinds of beekeeping supplies have steadily decreased, till to-day there are not half a dozen dealers in the country who are getting a new cent for an old one. These people are keeping along, and hoping against hope, that something will soon turn up that will better the condition of things.

We sometimes look over the advertisements found in the bee papers. One-pound sections are advertised at $3.00 per 1,000. We contend that no man even with the most improved machinery can manufacture 1,000 one-piece first-class sections and pack them for shipment, for the small sum of $3.00, and get a profit by so doing.

Why do business for nothing or for the fun of the thing? One more point we wish to speak about in this connection. Are the low-priced goods the cheapest? One man who has been advertising one-piece sections at $3 per 1,000 sent us a sample lot of about 300 sections, on which we paid $1.50 express charges. When the sections came we looked them over and found them worthless and threw the entire lot into the fire. They were as valueless as so much brushwood.

Take the matter of bee-hives. Some people advertise the L. hive at less than one dollar each, all complete. Well, such a hive will last about one year, but a hive that can be bought for $2 50 will last a man a life-time. We have some L. hives in the Bay State Apiary that were made thirty years ago. They are, to all appearances, good for thirty years more.

The names of new dealers are being added to the list every year. They come out with flaming advertisements and circulars. Ninety-nine out of every hundred discover the first year of their experience that there is "no money in it," and they soon disappear from sight, only to give place to others who must go through the same mill in order to be convinced that there are not millions in it.

Save your money and time, friends, for we can assure you that the beekeepers' supply business is thoroughly overdone.

Albino Bees.—Some time ago we gave our experience with the Albino bees. Our remarks had reference to but one strain of Albinos, and that strain originated in Maryland. Albino bees produced by a cross between the Syrians and the Italians such as Dr. Tinker has developed, is a far different bee from those Albinos bred by in-and-in-breeding the Italians. It must be evident to any beekeeper, that a strain of bees whose only good point is in its beautiful color, and that produced by in-breeding, must be worthless. At least we have found it so.

Cheap Bee Papers.—There is much rivalry going on among some of the bee journals; and, in order to get ahead and secure the largest circulation, some of the parties engaged in the strife have reduced the price of their paper to a figure far less than what a first-class journal can be printed for.

Now, as a matter of course, any one will readily see that the publisher must have a fat pocket-book, the price of the paper must be raised, or the publication discontinued at no distant day. We do not question the fact that some of the journals can stand the pressure for a long time so far as money is required. Will they? is the question.

This lively competition reminds us of two grocerymen whose places of

business were in a town but a few miles from Wenham. One of the parties referred to reduced the price of sugar to the actual cost. Not to be outwitted by such a move, the other merchant did the same thing. As soon as groceryman No. 1 heard of the reduction his rival had made, he at once put the price of sugar at less than cost.

Groceryman No. 2 said he did not care for that as he was willing his friend should sell all the sugar, and the more he sold the sooner he would have to close his shop. Well, this proved to be the fact. Now, suppose it costs fifty cents to print twelve copies of any paper, and the price it is sold for is but twenty-five cents, or fifty per cent less than cost: it is evident that the more subscribers a man has the more he will lose. Go ahead, gentlemen, put out your money. We are not sorry that we have none to put out in that foolish way.

How to winter Bees. — If any of our readers have not seen the Essays "How to winter Bees" as printed in the "Api", October (1886) issue, please state the fact on a postal card and send your address and a copy will be mailed to all who apply.

We have just printed a large edition of that (October) number, not only to supply those eleven essays, but also to place our price list of apiarian supplies in the hands of all who desire it.

The essays on wintering bees are by Dr. G. L. Tinker, P. R. Russell, Prof. Cook, J. E. Pond, G. M. Doolittle, Chas. Muth, J. F. Bingham, G. W. Demaree, A. E. Manum, James Heddon and C. W. Dayton, all well-known among us as the best and most practical beekeepers in the world.

The essays are printed and issued in a SPECIAL Edition of the "API." Sixteen pages of which are entirely new matter that was not given in the 1886 issue.

This special, or extra, number of the APICULTURIST will be found to contain a large amount of most valuable information regarding the care of bees and we hope to place a copy of it in the hands of every beekeeper in the country. Sent free by mail, until further notice, to all who apply.

Those who receive the special number will find what will appear to be inconsistency in prices, discounts and offers of premiums. We will say in reference to that matter that the Oct. (1886) issue was plated, or stereotyped more properly, and no change could be made unless the entire page was reset.

After all the new matter was ready for the press we found there were 18 pages where 16 pages only were needed, and so pages 241 and 242 of the plates were left out, but in doing so the index was not changed to correspond. In order to find the right page the reader must count two pages back, of the one given in the index when it occurs after page 240.

Who believes it?—A fellow travelling in New York state was shown some honey in the comb said to be twenty-five years old. This may be true, but when it is stated that the honey had not changed in taste or appearance not having granulated even, then we beg leave to say we do not believe it, and it strikes us not one man in a million acquainted with honey will believe one word of it.

The fact is the man who published the statement was sold.

To advertisers.—One of the advantages in advertising in the AMERICAN APICULTURIST is the fact that the proprietor or manager of the "Api" has no advertisements in its columns, thus none of those who advertise in our paper do so in competition with us.

Bear in mind that the AMERICAN APICULTURIST is not a local bee paper. We have more subscribers in any one of the western states than we have in all six of the New England states together.

We shall undertake to rear a few more Albino queens the coming season, for the purpose of testing some strains which have been brought to our notice.

Mr. Swinson and others claim that they have Albino bees superior to any heretofore tested in the Bay State Apiaries. We will rear a few hundred queens, and give our friends and customers a chance to test them with us. If these bees will winter as well and come up to the work in all respects as the strain of Italians recently described in the "Api," we shall be satisfied that all Albinos are not alike.

The following slip was taken from a bee paper and sent to the "Api" by a friend.

Mr. Henry Alley has requested us to stop exchanging with the "*Apiculturist*" and will not permit us to subscribe to his paper, even though we have sent the money twice. The only cause to which we can lay the origin of this remarkable decision of Mr. Alley, *is our publishing commendations of the so-called Albino Italian.* All we want is to know when Mr. Alley publishes anything relative to ourselves or the MAGAZINE; and since we are unable to keep our eye on him by being a subscriber to his paper, we would request those few of our readers who take his paper, to send us any copy, after they are through with it, containing such matters as we have referred to, and we shall reimburse them for the trouble, and return the paper.

No, we did not accept of money from the authors of the above for subscription to the AMERICAN APICULTURIST, but they forgot to state the fact that I offered to send them the "Api" for nothing as long as they desired it. The reasons they give why I wished to discontinue the exchange is a falsehood, as I gave my reasons in plain words and they could not misunderstand them. Publishing the article they refer to never gave me any concern; at anyrate, I have in no way indicated that it did. My reasons for discontinuing to deal with that paper are the same as a good many other parties give; and that is abuse, which the editor of the paper from which the above was taken is continually dealing out, and in most cases, to his best friends. They seem to be in a good deal of trouble because we publish a much better bee paper than they do. No one will forget how the young man who edits the New York bee paper abused Mr. Locke when he was editor of the "Api."

Well, we will let it all pass. We do not propose to use our columns to reply to charges of irresponsible parties. This is the first and the last time we shall notice anything of the kind. To show how much the paper referred to values its reputation for truth and veracity we refer our readers to the item "Figures don't lie," as that refers to the same publication the item at the head of these remarks was taken from.

Figures don't lie.—The proprietors of a bee paper published somewhere in the state of New York, have stated in big *red* letters that their circulation had reached 15,000 copies. One of their correspondents, a Mr. Abbott, stated in the April issue of the paper in question that it had reached 9,000 copies To this the editor says:

"[Mr. Abbott we are sorry to say overrates our circulation. He has in mind our December issue of 9300. We have not reached 9000 yet, but we are getting there gradually.—ED.]"

Whew! there is quite a difference between 15,000 and 9,000, and so there is quite a difference between 9,000 and 3,000. The "Api" will probably get there as soon as our neighbor. As the editor of the paper having the big circulation (on paper) "cannot keep his eye on us" we will mail him several copies of this issue of the "Api." What few of our readers take the B. K. M. will please notice.

Des Moines, Iowa.

FRIEND ALLEY:

In your reply to A. Norton, "Api culturist" No. 4, current volume, paragraph two, you unintentionally do the invertible hive an injustice. The frames are not spaced "by blocks of wood or blocks of any thing else;" they *are spaced precisely* as are Langstroth frames, and have the same lateral play as do those justly celebrated frames. The frames of the invertible hive hang from the centres of thin ends, in rabbets cut into the mating edges in the middle of the hive. When it is necessary to move the frames, the Van Deusen clasps at each end of the hive are loosened and the upper half of the case may be lifted or taken off entirely, and the frames manipulated, spaced or re-spaced at will. J. M. SHUCK.

[You are correct, friend Shuck. I had not seen the hive for a year, you sent P. H. Morant & Co., till to-day. When your letter came, I at once went and examined the hive and found I was wrong in the statement made in the API, and had the impression that the frames were spaced as stated in my remarks. We cheerfully make the correction.]

GLEANINGS FROM CORRESPONDENCE.

Newport, R. I.

MR. ALLEY:

Is the book, "Alley's Queen-Rearing," that I see advertised, the same as the "Handy Book?"

W. S.

[Yes. The full title of the book is "The Beekeepers' Handy Book, or Twenty-two Years' Experience in Queen-Rearing."]

Hamilton, Minn.

EDITOR "API:"

Your Question and Answer department in the "Apiculturist" is complete and very instructive.

I thank you very much for inserting my questions and having them answered so well.

Yours,
HOWARD BABCOCK.

Harrison, Ohio.

MR. ALLEY:

The "Api" arrives on time with its hints and suggestions for the month. It is an intellectual feast that the modern beekeeper can not afford to be without.

Respectfully,
JAMES A. SCOTT.

DeKalb Junction, N. Y., April 7, 1887.

Bees in northern New York are all in cellars yet, and in fine condition.

The weather is clear and cold, and the mercury hovers too close to zero nearly every morning to please beekeepers.

No snow except in fence corners, and the fields are frozen as solid as a rock every morning. Poor show for clover.

IRA BARBER.

Skowhegan, Maine.

THE CYPRIAN BEES.

Last season I had presented to me a fine Cyprian queen, by A. Norton of Gonzales, Cal. I found them very mild to handle, as gentle as the Italians. I can say they were the mildest Cyprians that I ever saw. The queen was very prolific. I am not fully decided as to their honey-gathering qualities compared with other kinds of bees, as it was a poor honey season with me last year, and I could not give them a fair test.

W. H. NORTON.

Hampden, O.

MR. EDITOR:

I am a novice in beekeeping and a subscriber to the Apiculturist, and am well pleased with it; think it is the best bee journal published.

W. D. BALLARD.

I consider the "American Apiculturist" invaluable to apiarists.

A. G. W.

Chittenango, N. Y.

EDITOR AM. "API."

Please do not take it as flattery if I give you my reasons why I admire the APICULTURIST.

1. For the Editor's plain, outspoken and independent manner of conducting a public journal.

2. For the plain, practical common-sense articles from its able contributors.

Last, though not least, there is less trash enters its columns than those of any other bee journal.

A. F. SMITH.

CIRCULARS RECEIVED.

Prime & Gove, Bristol, Vt.
E. M. Youmans, Andover, Conn.
W. W. Bliss, Duarte, Cal.
J. B. Murray, Ada, Ohio.
C. W. Costeloo, Waterboro, Maine.
Joseph E. Shaver, North River, Va.
Smith & Smith, Kenton, Ohio.
Edw. R. Newcomb, Pleasant Valley, N. Y.
W. E. Clark, Oriskany, N. Y.
F. A. Snell, Milledgeville, Ill.
John Nebel & Son, High Hill, Mo.
Frank A. Eaton, Bluffton, Ohio.
Oliver Foster, Mt. Vernon, Iowa.
Arthur A. Davis, Clark's Green, Pa.

Our Club Rates.

Am. Apiculturist and Am. Weekly Bee Journal,		$1.80
Am. "Api" and Gleanings (semi-monthly)		1.90
" " "	Bee Hive (bi-monthly)	1.00
" " "	Beekeepers' Handy Book	1.50
" " "	Cook's Manual	1.70
" " "	A Year among the Bees	1.50
" " "	Alley's drone and queen trap	1.00

VINEGAR FROM HONEY.

FRIEND ROOT:—Having seen, in GLEANINGS, an article on honey vinegar, I shall express you a sample of ours; and if you ever saw a better article, let us know it, please. We have been making

honey vinegar for the last four years, and find a ready sale for it. It eclipses the best vine vinegar for all purposes for which vinegar is used. Below I will give my *modus operandi*.

When making vinegar, one must know that water will turn into vinegar providing it contains the necessary quantity of sugar stuff, and is exposed to fresh air and a warm temperature. The warmer the temperature and the better the circulation of air, the sooner vinegar forms. A barrel is laid down, and an inch hole is bored in the upper end of each head, near the upper stave. This admits of a good air-passage over the body of the honey water. Tins with fine perforations nailed over these holes, with the rough side outward, exclude flies and skippers. Take about one pound of honey to one gallon of water, thoroughly mixed up, and nail a perforated tin on the bung-hole. We take thirty-five to forty pounds of honey for a barrel containing forty to forty-five gallons of water. The warmest place in the yard is the best place for the barrel. If the sun shines on the barrel all day, it requires from the beginning of April to the end of October to make vinegar satisfactory for all purposes. If not sour enough by fall, it will be all right by Christmas or spring, if placed in the cellar or a warm room.

No vinegar should be exposed to frost before the sour fermentation is complete, as such would turn the sour into a foul fermentation, and the vinegar be lost. We made last summer, on our bee-roof, ten barrels of honey vinegar like the sample I send you. The retail price is thirty-three and one-third cents per gallon, which gives us a better profit than the production of honey, as you will see.

CHAS. F. MUTH.

Cincinnati, O., Feb. 5, 1887.

Gleanings. Mch. 1, 1887.

In addition to the above Mr. Muth says: Water sweetened in the proportion of about one pound of honey to one gallon of water and standing in a warm place will turn into vinegar in a stone-jar as well as in a barrel. A barrel with one head out and standing in the sun will answer the purpose. But the transformation is hastened by the larger surface being exposed to the air, as is the case with a barrel lying down and an air passage over the top of the liquid.

We prefer, as a summer drink, a mixture of honey-vinegar, water and honey or sugar, to the best of lemonade.

[Mr. Muth mailed us a sample of the honey-vinegar. It is very nice. Honey-vinegar will be one of the things manufactured at the Bay State Apiary in the future.]

NOTES FROM THE BAY STATE APIARY.

HENRY ALLEY.

SPRING has come, or rather we have some warm days about this time (April 4) when the bees can take a flight, and we can now know the true condition of each colony.

As stated in the "API" last fall, a part of our colonies were put in the cellar and the balance packed on the summer stands. Of the two methods of wintering we much prefer the out-door one. One or two of the colonies in the cellar died from the loss of queens, and one by dysentery. I cannot think that it was pollen that caused dysentery as all our colonies had an equal chance to gather pollen and the same kinds of honey. A vigorous queen will produce vigorous and hardy progeny. A weakly

queen may be very prolific and yet her offspring far from being strong and hardy. Unhealthy bees cannot properly digest food of an inferior quality, say such honey as is gathered late in the fall. The consequence is, disease is sure to develop long before spring and the colony dies of dysentery. The sickly, weakly bee cannot digest the unsuitable food gathered and stored in the combs. A strong, hardy queen is pretty sure to carry her colony through the winter in good condition.

DEAD BEES ON BOTTOM OF CELLAR.

On March 14, I removed all the thirty-six colonies of bees from the cellar to the stands. They had a chance to fly four hours in the bright and warm sunshine, the weather was very warm and no bees were seen on the snow. The dead bees on the cellar bottom were all swept up and I found not far from three pecks. It strikes me that such a large number of dead bees from thirty-six colonies was more than there should be. Notwithstanding the large quantity of dead bees, the hives were very full, and before the bees were done flying everything within a dozen rods of the apiary was pretty well bespattered with the excreta of the bees.

Before dark all the colonies were placed in the cellar again where they remained till April 4. Considering the fact that a large number of our colonies are used late in the season for queen-rearing which of course is a damage to them, we do not think our loss a heavy one. Some of the colonies which were used for queen-rearing after August tenth died, while those so used before that time came through in very good condition. In future all colonies, used for queen-rearing after Aug. 8, will be united, that is, the combs containing brood will be given to other stocks, and in so doing the loss in winter will be very much lessened.

BEES ON THE SUMMER STANDS.

All the colonies wintered on the summer stands, that were in good condition in the fall, came through the winter in splendid order. The hives are very full of bees, and so far as I can judge not 20 per cent. as many bees have died out-of-doors as died in the cellar.

I hardly think I shall ever winter any more bees in the cellar. Am satisfied that the hive described in the "Api" last fall, is far better to winter bees in than any cellar. The advantages of wintering bees on the summer stands are many over those claimed for the cellar; and out-door wintering is far the best method in the long run. With a good hive, a strong vigorous queen and suitable food, one is pretty sure to have as many strong colonies in the spring as he had in the fall. When the above conditions are not complied with, then a good lot of empty hives will be on hand in the spring.

WIRE-CLOTH HONEY-BOARDS.

The cloth honey-boards which were on all our out-door hives during the winter, were removed and replaced by wire-cloth ones instead. This change is made so that the bees can be fed at any-time, and their true condition known at a glance without opening a hive. A small amount of granulated honey can be placed on the wire-cloth, all covered up warm and the bees will take the food through the meshes of the wire. Our hives, you will remember, are so constructed that this method of feeding can be practised with little or no trouble. The brood-chamber consists merely of the eight frames and two side-boards, and then all is covered and protected from the weather by an outer case. The packing still remains between

the two hives, and will so remain till June, or till the bees are ready to enter the sections.

One of the advantages in using the wire-cloth honey-board is this: by raising the cushion one can see at a glance when the bees commence to build brace-combs between the tops of the frames, and that is about the time to place the sections on the hive. All this can be seen, too, without getting stung or having any bees fly out at the top of the hive. Now, such an arrangement is not an actual necessity, but it is nevertheless a grand idea; and, notwithstanding I can handle bees and not get stung, and do not fear a bee any more than I do a house-fly, I certainly like the wire-cloth arrangement as above described, for a honey-board. Mr. P. R. Russell, one of our most practical and well-known beekeepers, uses these wire-cloth honey-boards during the entire winter and there is not the least objection to doing so. If you have read Mr. Russell's essay on wintering bees, as given in the Oct. (1886) No. of the "Api," you will understand how he prepares his hives in the fall, and he always winters his bees successfully, too.

QUEEN-REARING IN THE BAY STATE APIARY.

By May 10th, queen-rearing will be well under way, and about June 1st, untested queens will commence to be sent out by mail, at the rate of 100 each week.

We hope to be able to supply about 2,000 queens of the strain described on page 101 in April issue. We are very enthusiastic over this particular strain of the Italians. Yet we will not claim for them that they are the "best strain of bees extant" or that we are the most "*scientific* queen-breeder in the world" but we will claim that the strain of bees in question will winter in any climate and on the summer stand to the satisfaction of any person, and we will also claim for them that, so far as can be, this strain of bees is perfect in every respect and in everything desired or expected of bees.

Our colonies of this strain are very fine, and it would be hard to find twenty more beautiful, healthy and hardy colonies of bees. It is our intention to build these colonies up to the swarming point as early as possible; and, if possible, force each one of them to swarm. Thus we shall secure nearly two hundred fine queen cells just at the time when they will be most needed.

By using the drone and queen-trap, we shall have no trouble in getting a large number of cells built. When the bees swarm, and while they are in the air, the hives will be opened, and the queen cells removed to the nursery. The returning bees will then be kept queenless seven days when another set of cells will be ready to be removed and then a queen will be introduced, and no more swarming will be attempted by that colony during the season.

This plan will be found one of the best and most practical to control swarming, and queen-breeders will find it one of the best methods to practise in cell-building. The honey producer would have no trouble in keeping the swarming fever down by such a practice.

Use the drone and queen-trap. Catch the queen when the colony swarms. Keep her away from the colony (bees) that has swarmed. In seven days after the first swarm issues, remove the queen cells, introduce the queen that came off with the swarm and no more swarming need be expected that season from a colony thus treated.

If the trap is used to catch the queen, she may be kept in it for several weeks by merely placing

the trap in a box, or in some place that will protect the bees from the sun and rain. Several hundred bees will remain with the queens, and it will amuse the beekeeper very much to see the bees perform that stick to the queen. Each day, and several times some days, the bees in the trap will swarm, go into the air and as the queen cannot leave, the bees soon return again. In this condition the queen and bees will live for a long time, or as long as they can gather food from the fields; thus you will see that there is no better or more convenient way to control swarming and also for preserving a queen than by the methods here given. If your apiary is away from home, or if one has business and cannot visit the apiary but once or twice each week, the trap will prevent any colonies from absconding to the woods, and to know that a colony has cast a swarm during the absence of the beemaster, all that is necessary is to examine the trap and the queen may be seen on the wire-cloth by disturbing those in the trap a little. If a queen is found, remove the trap to some safe place, open the hive and destroy the cells, and in the course of a few days (say six days) destroy any new cells, let the queen run in at the entrance and use smoke freely for a few moments.

I can give another method for controlling swarming by the use of the trap, but it is not as practical as the one given, as a colony would have to remain queenless nearly fourteen days.

Send for our 32-page
PRICE-LIST.

H. ALLEY,
Wenham, Mass.

ADVERTISEMENTS.

A GREAT SCHEME!

Can We Sell Honey to the Millions?

Investigate our new, peculiar 5 ct. package for extracted honey. *Eaten from the hand without knife, spoon or stick as cleanly as to bite an apple.* The first and only cheap successful package ever invented. We also have the *first chromo card especially for beekeepers.* Bees, implements, etc., elegantly printed in eight colors. A big move to extend reputation. Italian Queens, Splendid Foundation, Bees in Heddon Hives for sale, and all represented on our card. Circulars and card, giving full information free. Package of cards, 10 cts. Sample honey package filled with honey, mailed for 12 cts. Now is the time to look these things up for the coming season.

Address,
J. H. MARTIN,
4-87-tf. *Hartford, N. Y.*

EXTRAORDINARY EXCHANGE!

Having disposed of my bee-supply business at Des Moines, Iowa, to Jos. Nysewander, I hope my friends and customers will be as generous with him in orders and good will as they have been with me. I am no longer in the supply trade here after March 1, 1887.

J. M. SHUCK.
5-27tf.

LOOK HERE!!

Do you want choice colonies ITALIAN Bees cheap? Full colonies in Carey Improved L. hives, 10½×14 inches, at $8.00 per colony. Also a few colonies in Kidder hives, frames 10¾ and 11¾ inches, at only $7.00 per colony. Those in want of choice colonies of fine Italian bees will do well to send their orders to

W. G. HILLMAN,
5-87-2 *Green River, Vt.*

BARNES' FOOT POWER MACHINERY.

Read what J. I. PARENT, of CHARLTON, N.Y., says—"We cut with one of your Combined Machines, last winter, fifty chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make and we expect to do it with this saw. It will do all you say it will." Catalogue and Price-list Free.

Address, W. F. & JOHN BARNES,
2-87 6 mo. *No. 484 Ruby St., Rockford, Ill.*

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., JUNE 1, 1887. No. 6.

We deal in first-class apiarian supplies of all kinds. lowest prices. Prompt delivery. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

COMB HONEY.

METHODS AS PRACTISED AND ADVISED FOR THE PRODUCTION OF THE LARGEST NUMBER OF POUNDS IN ANY SEASON AT THE LOWEST COST OF LABOR AND TIME AND IN THE BEST MARKETABLE STYLE.

METHOD NUMBER ONE.

G. M. DOOLITTLE.

IN order to produce good results by way of getting plenty of well-filled sections of comb honey, the first requisite is plenty of bees when the honey harvest arrives; for, whatever else we may have, success cannot be obtained without plenty of bees. Then one of the greatest objects looking towards an abundance of bees is a good queen, for without such a queen it would be impossible to get the required force of bees at the time it was positively necessary that we have them, if success is to crown our efforts. These bees MUST be on hand in time for the honey harvest, else they become merely consumers instead of producers. How often we find people keeping bees on this consuming plan, getting nothing from them in the time of section honey except perhaps a little fall honey of inferior quality, for the reason that they do not have anything but colonies weak in bees at the time the harvest of white honey occurs. Such beekeeping does not pay, and if we would succeed, our first step is to get plenty of bees in time for the honey harvest.

White clover is the principal honey-producing plant in most localities, which blooms about June 15, and is at its best from June 25 to 30, hence our bees must be in readiness at that time if we wish to succeed. After years of trial I find that it takes about six weeks to build up an ordinary colony in the spring, to where they are ready to get honey to the best advantage, so we should commence active operations about May 1, where clover produces our white honey crop. There are several ways of working our bees to get the greatest possible number at the right time, the best of which as I consider them, after years of trial, is the spreading of the brood in connection with chaff packing as given to us by J. H. Townley in 1877.

For this packing some prefer one kind of material and others a different kind, such as sawdust, leaves, the many kinds of chaff and hay. After trying nearly all of them I find that oat straw is fully equal to anything, and less objectionable on account of litter and scarcity. Having the colonies

all warmly packed we must reverse the brood at the time pollen becomes plentiful, in all of the good colonies, but leave the poorer ones till later because they might suffer from such a procedure if a cold spell should occur. By reversing the brood, I mean the placing of the combs having but little brood in them at the outside of the brood-nest, in the centre, which brings the combs having the most brood in them on the outside. Thus, while the colony has no more brood than it had before, the queen finds plenty of empty cells in the centre of the brood-nest, in combs having some brood in them, and she at once fills these combs with eggs, so that in a few days they will contain more brood than those which were moved to the outside, while the bees have fed and taken care of this as well as though its position had not been changed. In this way quite a gain is made in regard to increasing the brood.

In about a week, if the weather is favorable, a frame of honey is taken from the outside of the cluster, the cappings to the cells broken, and after separating the brood-nest in the centre, the frame of honey thus prepared is placed therein. In removing this honey and carrying it to the outside of the brood-nest the bees are made happy, which causes them to feed the queen an extra supply of egg-producing food, so that in a short time this frame is also filled with eggs. In a week or so as the bees increase in strength another frame is placed in the centre as before, and so we keep on till every comb in the hive is filled with brood.

In proceeding as above it is essential to know that each colony has sufficient honey to supply all its wants for at least two weeks, for if we wish to obtain the largest amount of brood possible, the bees must never feel the necessity of feeding the brood sparingly on account of scanty stores. If plenty of honey in the frames is not at hand, a feeder and some sugar syrup will be a necessity, but I consider the frames of honey preferable for this purpose. Having the hive filled with brood, the next thing to be done is to put on the sections. Of course these are all in readiness, for a successful beekeeper will always work at this getting-ready part at odd spells during winter and early spring. After several years of experience and testing of various plans I conclude that it is best to fill the sections with thin foundation, not so much to help the bees, as to get nicer looking combs and those which will stand shipment better. Some think that the bees will not work so well on foundation a few months old as they will on that just made, so defer this getting-ready part till at the time wanted. I think the idea a mistaken one, but even if there was some truth in it I still should put the foundation in during winter believing that the gain would more than overbalance the loss. The best way which I know of (after trying nearly all the plans and fasteners recommended) to fasten this foundation in sections is to take a board of suitable width and length and fasten to it five or six little boards of the right thickness to come half way or to the middle of the sections. Now slip the sections over these little boards and lay the foundation in its place with one edge coming closely to the underside of the top piece to the section. Set the board angling in two directions so that when melted wax is poured from a spoon at the upper corner of the V-shaped trough, formed by the foundation and section, it will slowly run to the other side, thus fastening the foundation securely to the section.

If we begin at one end and put on a section and foundation till we get to the other, the first will be cool and ready to take off when we get to it so that no time is lost waiting for the wax to cool. In this way I can put in foundation almost as quickly as I can handle foundation and section. The sections filled with foundation are next put in wide frames holding but one tier of sections deep, and having separators nailed to them, for after repeated trials I consider the no-separator plan a move in the wrong direction. Other wide frames are filled with sections containing comb left over from the season previous, which combs I consider of great value in getting the bees at work quickly in them. One or two are claiming that these combs should be cut out and melted into wax, the sections being burned, but it seems to me a person advising such a procedure cannot be in his right mind, for with me they are of great value and when filled are in no way inferior to that built from foundation the same season it is put on the hive.

Having all in readiness I take one wide frame of sections containing the empty comb and place it over the centre of the brood-nest, when two wide frames of section filled with foundation are placed on either side of it, thus giving a capacity of about twenty pounds, which I consider ample for the largest colony at first, for if too much room is given on the start, it seems to discourage the bees. On either side of the wide frames two thin boards are placed to close the whole like a box, the boards being held in place, and the wide frames as well, being clamped together by coil brass wire springs. It takes but a few moments to put them on as a whole load is wheeled right into the apiary alongside of any hive you desire. In a week or so, as soon as the bees are well at work in what sections have been given, unclamp them and put in two or four more wide frames of sections, putting them where four are used, in each alternate space after spreading the five wide frames apart, when the whole nine are again clamped together as before. When a colony is not strong enough to work to advantage in so many, put in only one or two, putting these on either side next the one filled with comb. In this way the bees are coaxed to work with all the energy possible, and I much prefer the plan to tiering up, because only so few as two wide frames can be used on the smaller colonies while my hive room allows twelve for the largest, or about sixty pounds capacity, which is as large as I ever wish to use, for often the second time putting on there are wide frames full of honey coming off every time more is put on. I formerly used side boxes, but since I have adopted chaff hives I find that the bees work to just as good or a little better advantage where the sections are spread out laterally, and to much better advantage than when tiered up. As the season draws to a close the empty sections are placed at the outside of those partly filled, so that when the season closes there are few unfinished sections and but few inch frames on each hive.

After two years testing of this lateral movement of wide frames of sections, I consider it far in advance of any plan yet devised for comb honey, as you can accommodate the size of the hive to suit the size of the colony in a very few moments, from a two-frame nucleus up to a powerful colony. Some seem to think that bees will not work in sections that spread out beyond the brood, but father Langstroth gave us the real facts when he said bees would work to advantage anywhere

where the heat and odor from the hive reached.

The sections being all on and the bees well at work in them, the next thing we may expect will be swarming. It will be remembered that for years I have called foundation in the brood-chamber an "expensive luxury," for I could get comb built below while the bees were at work in the sections, at apparently no cost whatever. For thus opposing foundation in the brood-chamber I have been ridiculed and called a fanatic for years, but now I am glad to see that Brother Hutchinson and others are adopting my plans so they will help bear some of the criticisms I have borne all alone for years.

Before a queen-excluding honey board was used, I hived my swarm in a hive containing ten frames with a division-board in the centre, under which the bees could run, so that in whichever side the queen chanced to go there the bees commenced work. In twenty-four hours after the brood-nest became established I put on the sections from the old hive, which were immediately taken possession of; then securing the five frames filled entirely with worker comb, for if any drone comb was built it was built in the sections, but since I use foundation in the sections I get little drone comb built anywhere. When the queen-excluding honey-board was thought of I adopted the following: while the swarm was in the air a frame of brood and the few adhering bees were taken from the hive and put in an empty hive and five empty frames having starters in them (of foundation) were put in where they came from, the rest of the hive being filled out with dummies. The queen-excluding honey board is now put on, the sections replaced and the swarm returned. In these two ways I have worked for more than ten years, securing two objects, lots of comb honey, and all worker comb built without the use of foundation. If the beekeeper wishes to keep these swarms for winter he will spread the combs apart after twenty-four days and insert four empty combs, as I gave directions in the Api for 1886. If not he will use them up, getting honey according to the plan advised by friend Demaree of Kentucky.

As soon as the old colony gets a laying queen two or more wide frames of sections are placed on these according to their strength, so that all are kept adding their mite to the aggregate season's crop. I might go on and multiply words regarding this great subject of getting comb honey, but as this article is already too long, I will stop here, trusting that I have made all sufficiently plain to enable the reader to secure a good yield of section honey.

In closing, let me emphasize that of all other things the getting of the bees in time for the harvest is the most essential point, and the next is keeping of all hands to work by adapting the size of the brood-chamber and amount of surplus room to the size of the colony. Failing in these two you fail of a crop. Succeeding in these you are sure of a good harvest if the flowers secrete honey.

Borodino, N. Y.

For the American Apiculturist.

METHOD NUMBER TWO.

DR. G. L. TINKER.

HOW TO GET STRONG COLONIES.

THE success of the apiarist in producing comb honey depends much upon getting strong colonies in time for the harvest. Where the harvest is from the clovers

chiefly, colonies must be got in proper condition early by June 1st at the latest, in this locality. If the main crop is derived from the basswood, at least three weeks' more time is given to build up strong colonies. Those that have wintered well and are provided with plenty of sealed stores and a good queen will require little attention and will usually be strong enough to take in their share of the first honey flow.

The most needful requisite in building up colonies in the spring is to see that all have plenty of stores to last at least till fruit bloom. Five Langstroth brood frames will contain the necessary stores for wintering and for brood rearing until May 1st, if the bees have proper winter protection. Then if the beekeeper will add several combs of sealed honey at the sides and cover all up warm, breeding will go on rapidly.

Protection is not only necessary in winter but valuable in spring. It always saves in stores to pay the cost and it invariably secures earlier spring breeding than in other methods of wintering. In any locality where bees can have a few flights in the month of March out-door wintering is the most desirable, since it is these early flights that are the inducements to breeding. As a rule cellar-wintered colonies do not breed much till set out in spring. If this should be late in April it will often be found that they have not a particle of brood; at the same time many young bees may be seen flying from chaff-hives. And it always turns out that the colonies that have the most young bees in April will swarm first and make the most comb honey. But if cellar wintered colonies are taken to the summer stands and packed in the latter part of February or in early March they will do equally well.

Bees may be successfully wintered out of doors on a full set of brood combs in a large packing case, but more protection is required than in cases where the bees are placed on just enough combs to contain the necessary stores. I prefer a brood comb capacity of about 800 square inches of comb surface for winter and to have the combs in a case made to contain no more nor less. During fruit bloom a similar case of combs having sealed stores, is placed beneath the first, when the queen and bees will extend their work downward very rapidly. Indeed, with such cases properly constructed, and with proper management, it is desirable to have a larger brood space than is usually provided; since a prolific queen can be made to quite fill with brood before June 1st from 1,400 to 1,800 square inches of comb, or nearly as much as two ordinary eight-frame Langstroth hives may contain. This very large area of brood can be obtained after a colony becomes numerous by simply exchanging, with proper judgment, the combs between two such brood cases. It is quite probable that the eight-frame Langstroth hive could be very successfully managed in this way. The essential point is to have a numerous colony by fruit bloom, but I have already indicated how such colonies can be obtained. In developing these large colonies the beekeeper must see that after fruit bloom the bees have plenty of stores. The interval between fruit bloom and white clover is one in which we cannot afford to stint the bees in the least; for every cent invested for needful food to feed a large amount of brood just before clover bloom will be returned with great profit.

The advantages of this system of management can hardly be estimated as compared with the usual methods. First, we are able to get

a great force of workers at a time to be of practical use. And again, the queen will be so much exhausted that later on in the season she will not lay so many eggs at a time when they will hatch out non-producing workers. We thus obviate any necessity to limit the work of the queen by cooping her up on one or two combs as has been suggested. Necessarily there will be swarming; but I would ask, why not let bees swarm? For myself, I would not give a fig for a non-swarming hive. If hives are constructed for easy operation it is rather desirable to have bees swarm, as the choicest comb honey is always obtained from the swarms.

THE SECTIONS AND SUPERS.

The most comb honey can be obtained by using full sheets of foundation in the sections and it no doubt pays to use them, but there is no denying the fact that the nicest comb honey is made where starters only are used. It is best to use separators but not without open side sections. I do not advise nor would I use separators with closed side sections for better results are obtained without them. The sections should be so wide that the bees will not be disposed to store pollen in them. I use and prefer a section $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$ with separators. Without separators the $4\frac{1}{4} \times 4\frac{1}{4} \times 7$ to the foot sections are no doubt the best. A section of less width if filled over shallow brood cases, or even over a contracted case of deep frames, is very liable to contain more or less bee-bread. And it is hardly needful to add that no wise beekeeper will ever put such honey on the market, at least during warm weather, as it may be infested by moth worms.

The supers should be adjusted as soon as the colonies becomes strong in bees, and it is better that they be adjusted at least a week before the honey flow begins. The first supers put on the hives should always contain one or more sections having one comb built the previous season. These partly filled sections should be put away by every good beekeeper at the close of the season with scrupulous care as they are very valuable. As soon as the first case is half filled with comb, if honey is coming in fast, an empty super should be placed beneath it and the tiering should continue until three cases are adjusted, if meantime the bees do not swarm. By the time the third case is ready to tier up the upper one will be fully sealed and ready to take off. In none of the operations here described should the bees be smoked unless they prove to be intractable. Any bees that cannot be handled during a honey flow without smoke are undesirable and should be superseded by a better strain. The practice of many beekeepers of always smoking their bees whenever they open a hive is not a good one. It is far more hurtful than molesting the brood-chamber where it can be done without the use of smoke. But as to opening colonies for any needful purpose I have not been able to see that it ever did any harm, if done with care.

INVERTING BROOD-CHAMBERS.

The practice of inverting brood cases is no doubt one that has come to stay. There is no other method of placing the brood close up to the sections with equal facility and advantage. It is, however, a question of the proper depth of brood frames as to the propriety of this measure. Cases of very shallow combs may be interchanged with about the same effect, but I desire here to enter an objection against the use of very shallow brood

combs. A frame less than six inches in depth inside is too shallow for anything. It is not a question of wintering on such frames, for I think that bees can be successfully wintered on combs three inches deep; nor is it a question of breeding when the hive is once full of bees; but the trouble is in making the start at breeding in the early spring. The whole season's operations are dependent on this start. A very shallow frame is not deep enough to allow a cluster of reasonable size to rear sufficient brood to push on the work at fruit bloom. From April 1 to 10 are laid the eggs that will hatch out the nurse bees for the greater part of the brood reared during fruit bloom and early May that we rely upon to gather the harvest. We must have these early nurse bees or fail. We cannot get them on a frame less than six inches in depth in the clear, which is about the depth of the cluster on the cold days of early spring.

With a deeper frame, inverting becomes a practical measure that may be depended upon in extending the brood area and for the removal of the honey to the supers at any time before the queen becomes exhausted by egg-laying. After that it is of no use to invert brood combs. But in any case, if the queen continues to lay extensively after the time when the eggs laid would hatch out non-producing workers, I should confine the queen on the case of brood containing the most sealed honey by the use of the honey-board, placing the other case above it with the brood as near the supers as it is possible to get it. Or, if the combs are not too old and dirty, I would place the case on the top of the supers, in which case the drones will find their way out of a very small passage near the top of the hive if they can see the light.

THE SYSTEM OF CONTRACTION.

In hiving swarms into hives with a contracted brood space, we have a measure at once simple, practical and efficient for the purpose of increasing the production of comb honey. The system originated with and was first made known to the public by Mr. G. M. Doolittle. In developing it there is, perhaps, as much credit due to the writer, as to any one, who first gave the outlines of the modern system of producing comb honey, from experiments made in 1883 and in 1884, with queen-excluding honey boards in connection therewith, in the "American Bee Journal," Vol. xxi, page 101. As I now practise it, a brood case of the proper size (which may contain anywhere from 750 to 850 square inches of comb surface), a wood and zinc queen-excluding honey-board (which is also my invention but now given to the public), and one or more section cases are used in which to hive all swarms. It is only by the use of such a hive that we can take full advantage of natural swarming and turn it at once to practical account. In my experience the work going on in the supers of the old colonies, when transferred to the new ones after swarming has been accelerated and a larger product is obtained from those that swarm than from those that do not swarm.

The brood frames in all cases are provided with starters as advised originally by Mr. Doolittle. They are cut from brood foundation one to two inches wide and fastened in the frames with melted wax. As there are few combs to build we have never had much drone comb built, certainly not more than every colony should have; and as the combs are shallow they are always built straight and regular, the spacing being always $1\frac{3}{8}$ inches from centre to centre of frames.

After hiving a swarm, the new hive is placed on the old stand and the old one left close by for about three days when we shake as many bees from the combs in front of the new colony as can be spared and remove it to a new stand. If we delay this operation later there are often many bees killed from fighting. The old colony may not swarm again; if it does the queen cells are cut out and the swarm returned. If it is made up of two brood cases, we can at this time elevate one of them to the top of the supers taking care that the young queen is in the lower case, or we can simply place the honey-board between the brood-cases. When the bees have hatched out of the upper case and the combs are all sealed up we may extract them, but the preferable course is to leave the case on the hive till fall. In making ready for winter we shall then find use for it and if not then it is to be put away for next season's use in building up colonies.

After the harvest is over and the honey taken from the hives, the bees in the new colonies having only one brood case should be united where increase is not desired To unite full colonies of bees proceed as follows:— take from one of the colonies (after being moved a few feet each day until near each other) the queen: in nine days cut out the queen cells when one hive can be set upon the other; there will be no quarreling or necessity to cage the remaining queen. In this manner the entire stock of the beekeeper can be reduced to any desirable extent. We consider this course infinitely preferable to the use of non-swarming hives, even if such hives could be made, as the net result in comb honey and honey in brood combs is invariably larger by this management.

I have found that a hive or brood-case that is just right for a swarm is also just right for wintering but only about one-half as large as it ought to be in the spring. If the contracted brood-case is too shallow, or if it contain less than 750 square inches of comb surface, the bees will store much pollen in the sections. The above space is therefore the limit of profitable contraction. But if the brood-case contains over 850 square inches of comb surface another evil appears in the form of too much drone comb that will be almost certain to be built where starters alone in brood cases are used as advised. If the ordinary ten frame Langstroth hive is used in which to hive old swarms we may get a little surplus comb honey from it but oftener none. Division-boards should be used in such hives or the unnecessary space filled up with dummies. Then to make the contraction system a success, a queen excluder should be put on the hive in all cases before hiving a swarm and at least one super of partly filled sections. In fact the practicability of the system is only fully assured by the use of the new wood and zinc honey-board.

CONSTRUCTION OF HONEY-BOARDS.

A simple frame is made as large as the hive or brood-case having a groove cut on the inside to receive the ends of the slats and the side slats and the slats are so spaced as to cover the spaces between the brood frames. They are set in the frame so that they will rest not over one-fourth of an inch above the top bar of the brood frames. The zinc is let into thin saw cuts in the edges of the slats. Four strips of zinc with a single row of perforations are used, two on each side, and four strips having two rows of perforations, are placed in the middle of the boards for an eight frame hive. This gives twelve rows of perforations for the bees to pass

through. I have made the boards with strips of zinc having only one row of perforations or eight rows in all for an eight-frame hive. These have done very well but I feel sure that eight rows of the perforations are not enough on very strong colonies. The boards as here advised are no hindrance to the passage of the bees in storing honey in supers, nor of bees with pollen for that matter. Fully as much honey will be stored through them as without them. They also prevent brace combs from being attached to the cases of sections so that the operation of tiering up the cases is always quickly and easily done. I believe their use to be indispensable to the most successful producer of comb honey.

New Philadelphia, O.

For the American Apiculturist.

METHOD NUMBER THREE.

By A. E. Manum.

HOW TO MANAGE NEW SWARMS AND INTRODUCING QUEENS.

A large crop of honey is much desired by every beekeeper, and as each beekeeper has his own peculiar method it is desirable that each should give his method that we may all learn as much as possible from the experience of others. In a good season a fair crop of comb honey may be secured by most any method. But, to obtain the best results possible, one season with another, the apiarist must take advantage of conditions. While a large crop is desirable the quality of our honey should be looked after as well as the quantity. The present depressed condition of our markets makes it quite necessary that we turn our attention to cleanliness and style of package in order to gain favor with the consumer. Hence the beekeeper who sends his honey to market in the finest and most attractive style is the one who will make the quickest sales and get the highest price.

Having been aware of this fact for a number of years, I not only aim to secure a large average number of pounds per colony, but I try so to manage while securing it and afterwards preparing it for market, that my honey when in the market may appear as attractive as possible.

I will now as briefly as possible give my method of securing comb honey.

In the first place I use the $4\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{7}{8}$ — or 1-pound sections— and secure my surplus wholly from the top of the brood-chamber. Years ago I practised side-storing, but that plan did not work satisfactorily with me, as our nights are usually so cold as to cause the bees to desert the sections during the night, so I was obliged to discontinue this practice and depend upon top boxing altogether.

I use full sheets of foundation in the sections and have always used —and still use—wood separators between the sections. I know that some beekeepers say that they can secure as perfect combs without their use, but I am not far enough advanced in the science of bee culture to dispense with separators and at the same time obtain satisfactory results, hence I continue to use them.

I manage my bees in the spring to the best of my ability to get them up as strong as possible by the time raspberries and white clover come into bloom, and as I allow natural swarming, preferring it to any non-swarming plan, I aim to have swarming commence as soon as clover begins to bloom. Although I do not desire much increase yet I find that I can get more comb honey by allowing the

bees to swarm naturally, than I can by trying to prevent it.

MANAGEMENT OF SWARMS.

My management of swarms being somewhat different from that of most beekeepers, I will here give my method in detail.

Not wishing a large increase, I aim for best results in comb honey. Therefore I allow but one swarm to issue from each hive, and it is well known by all beekeepers that if a full swarm is taken from a hive, the old colony is so reduced that but little is done in the sections for some time after.

For some years I was puzzled to know how this loss of time in the old stock might be avoided. But I am happy to say that a few years ago I hit upon a plan that pleased me so well that I have practised it ever since. It is this: I always have on hand a few hives ready to receive new swarms. Now, when a swarm issues, I at once go to the hive and look for the queen (I have all of my queens' wings clipped so that I am always on the watch for swarms) and as soon as she makes her appearance I put her into a small wire cage made for the purpose, of which I always have a few in my pockets during the swarming season. This cage has a piece of wire so fastened to it that it forms a hook. Now, this cage with the queen is hooked to one of my swarm-catchers, which I set up in some convenient place so the bees may readily locate their queen and there cluster. As soon as all have clustered nicely, I take the catcher with the swarm and carry them back to the old hive and brush off about one-third of the bees and allow them to return to their old home. These returned bees and those in the field in search of honey will keep the old hive well stocked with bees, so that work in the sections is but little retarded. Now I take the balance of the swarm and the queen, and hive them in a new hive that is awaiting them, as stated above, and the next swarm that issues is served in the same way—if it issues within forty-eight hours— except that I return this queen with the one-third of the bees, and the other two-thirds are hived or united, with the two-thirds of the first swarm that are in the new hive. If both are hived the same day, I dump them all together without ceremony; but, if the next day, the queen is caged before uniting and is kept caged for at least six hours. Now I go to the hive where the second swarm issued, to which the queen was returned, and take out two or three combs of brood, usually eggs and larva, and put in empty combs or foundation, after having removed all queen cells. The sections are now returned and work in them goes on as though nothing had happened. The brood that I have taken out is given to the new swarm or used for other purposes. It is not always necessary to cut out the queen cells, as stated above, but it is safer to do so. The hive that cast the first swarm I allow to remain undisturbed for four days, at the end of which time I examine the combs and cut out all queen cells but one, or all of them if I wish to give them to some other stocks; or, which is better, to give them a laying queen, or even a virgin queen, is better than a cell. By this method these two colonies will not be likely to swarm again, especially the one with the young queen, and it is seldom that the other will if they are furnished plenty of room in the sections.

I practise the above plan in all my apiaries, when swarming is done up early in the season, but if it lingers along later so that a portion of my bees do not swarm until the honey season is half through I

manage somewhat differently. In this case I return one-half of the bees instead of one-third and in the new hive I put in three new one-half swarms and sometimes as many as four one-half swarms, returning or destroying the surplus queens as before.

Perhaps I ought to state that I hive all new swarms on ten frames filled with foundation or empty combs, but if on empty combs the cells should be shaved off about one-half their length before hiving the bees on them. My hives take twelve frames, 9½ inches deep × 12 inches long, hence when using only ten frames I fill up the space with division-boards, thus crowding the bees below so that they are forced up into the sections, and as I aim to have my combs but $1\frac{5}{16}$ inches from centre to centre there is but little room in the brood-chamber for the bees to loaf in. It will be observed that by the above plan all my colonies are *made* and *kept* strong, just at the time when strong colonies are most needed and at the same time the bees have the *fun* of swarming and the apiarist the pleasure of hiving the swarms.

The next morning after hiving the bees, and while I have time before swarming for the day commences, I put one tier of sections on the new swarm. It is often the case that I hive three such parts of swarms as mentioned above, into one hive, making the same as two prime swarms in one hive. When I do, and the season is a good one, it is often necessary to tier up after thirty-six or forty-eight hours.

My object in managing, as I have stated above, is to keep all colonies so strong that they may fill the sections as quickly as possible, which means, when finished, *clean, white comb honey.*

In the fall, if I wish to reduce my stock, I unite two of these new colonies that were hived on ten frames, as they have been managed in such a way through the honey season that they have stored but little honey in the brood-chamber. Otherwise I would have to feed up two colonies for winter instead of one, which at present prices for honey would hardly pay, considering that I am not desirous of increase; making, as will be seen by my method of hiving and then uniting, an increase of only 25 per cent instead of 100 per cent as practised by some beekeepers.

Perhaps I should have stated at the outset that I put my sections on all strong colonies as soon as I see that honey is coming in freely. By putting on one tier at first and as soon as these are well advanced tiering up by slipping another set of sections under the first and so on as conditions require, I have had as many as six sets of sections on one hive at one time; making 192 sections that the bees were working in.

Let us remember that in order to obtain the best results either in a good or poor season, we must so manage in the early part of the season as to get the colonies very strong by the time white clover blossoms. It is my experience that one good strong colony, early in the season, will give more surplus honey than ten light ones.

I frequently find it necessary during the honey season to "jump" the sections. This is done by taking those at the ends of the clamps that the bees usually do not fill until those at and near the centre are nearly or quite completed, and exchange places with those that are the nearest filled at the centre. If this "jumping" is omitted, we are liable to have the centre combs somewhat colored by the bees passing over them while completing the end ones; hence it is important that we "jump" at the proper time, in order to have our honey white

and nice, and besides I consider it quite a help to the bees.

As the honey season draws to a close, I sometimes find it necessary to invert the sections in order to get *all* finished, as the bees are sometimes slow to finish up the lower edge of the combs when forage begins to slack off. Though all these little things make extra work for the apiarist, I find it pays me to attend to them and keep the bees at work to the best advantage. As the honey seasons with us here are very short, it is necessary that we keep the bees at work by giving them every advantage possible.

INTRODUCING QUEENS.

I am asked how I introduce queens. My reply is, that there are many ways in which queens may be successfully introduced. But what I consider to be the safest method is the way I propose to tell the readers of the "API."

The cage I use is made of wire cloth, eight meshes to the inch; this is cut into squares 4 × 4 inches. I remove two strands from each of the four sides, then I turn up each edge five-eighths of an inch forming a square box, as it were, without a cover. These are called surface cages. Mr. G. M. Doolittle has described them several times, only he uses wire cloth of much finer mesh. I like mine much better for their having a larger mesh. I now go to the colony to which I wish to introduce a queen (no matter whether the colony has long been queenless or has recently been made so, the method is the same) and take out a comb containing hatching brood (if they have such) shake off all the bees, then I lay the comb down flatwise and place the queen upon it and at once cover her with the surface cage moving it along carefully with the queen until the cage covers some uncapped honey and hatching brood, but the brood may be omitted if it is not convenient to get at. Now I crowd the edges of the cage into the comb, enough so it will not drop off, and return the comb and queen to the centre of the cluster, close the hive and leave them in that condition twenty-four or thirty-six hours (during the honey season twenty-four will answer) at the end of which time I take out the comb containing the queen and with my knife-blade I rim out a hole through the comb into the cage from the opposite side from the cage. The hole should be just large enough so the queen or bees can pass in or out of the cage. I then at once return the comb and the bees soon pass through the hole to where the queen is, when the queen will, in a short time pass out and go about her duty as though nothing had happened and whenever convenient the cage may be removed. I will state that I often allow the queen to run in at the entrance during the height of the honey flow, but I do this only where I have removed their old queen from two to six hours previous, or as soon after removing the queen as I notice they have missed her which is indicated by the uneasiness of the bees. In such a case a queen may be introduced with comparative safety.

Some colonies seem to be determined not to accept a queen. In such a case I would advise the following method: Shake the bees all out on a sheet and place an empty box on one edge of sheet and cause them to run in the box. Allow them to remain thus one or two hours and shake all on the sheet again and this time drop the queen among them and allow them to run into their hive. This plan has never failed with me, though it is so much work that I do not practise it unless forced to it.

Bristol, Vt.

For the American Apiculturist.

METHOD NUMBER FOUR.

DR. C. C. MILLER.

PLENTY OF BEES AND PLENTY OF PASTURAGE, THE TWO REQUISITES OF SUCCESS.

To tell all I know about the production of comb honey would make a fair-sized book. To add to it all I don't know, but would like to know, would make it much larger. So I can only touch upon some of the points here. The first two requisites are plenty of pasturage and plenty of bees.

I doubt if there are many localities where as large an average per colony can be had from one hundred as from twenty-five colonies. The largest number that can be kept in one apiary for the greatest profit depends upon circumstances, but is not likely to be much over one hundred.

In my own locality about the only source to which I look for surplus is white clover, so the great point is to have colonies strong enough at the opening of the clover harvest. In striving to secure this, whether it pays to meddle much with the brood-nest, I am not prepared to say. To spread combs of brood and insert between them empty combs, or combs of honey, may, in many cases, lead to disaster. If one of the outer combs of the brood-nest have the side of the comb toward the centre of the brood-nest well filled with brood, and the outer side containing little, it may hasten its being filled to reverse its position, *providing* there are plenty of bees to cover it well. Or, sometimes, the brood-nest in a Langstroth hive may be toward one end, and by reversing the central comb of the brood-nest we may force the bees to work the full length of the frame, always providing we do not chill brood by it.

In the majority of cases, however, if bees have abundance of honey, I believe the queen will lay about as fast, in spring, as the bees can care for the brood, and I think I prefer to have this abundance of stores left in the hive from the previous August. Of course, if I depended on a fall crop of honey the case might be different.

I would rather be too early than too late in putting on supers, and so I begin to put supers on the strong colonies before the bees begin to work very much on clover.

I have lately used the T surplus holding twenty-four one-pound sections each, and in the first super I put on each hive I generally put a section containing, or which has contained, some honey. The bees are quite prompt to occupy this section, and although they may entirely empty it, they will be pretty sure to re-fill it at once. A few sections partly filled are easily kept over from the previous season, and after the first two or three colonies have fairly commenced on nearly all the sections in their supers, these sections may be taken, bees and all, to be put, one each, in the supers of colonies commencing later. This matter of urging the bees to commence work in the supers as early as possible, I consider of importance. There seems to be something in getting bees into the habit of storing in supers.

The time for putting on the second super depends somewhat on circumstances. If the colony is strong, and there are plenty of bees to fill two supers, I do not see why they may not have a second super as soon as the first is one-fourth filled.

On the other hand, if a colony is so weak that it can only fill a twenty-four-pound super during the whole season it would be a

waste to give it a second super at any time. As fast as they need more supers, they are added by putting under those already nearly filled till toward the close of the honey flow, when an empty super is put on top if there is any likelihood that additional room may be needed. In case it is not needed the bees will not occupy it, whereas if put under the other supers they would make a start in it even if no more room were needed. The Heddon slat honey-board is put on the hive before putting on supers and is a necessity, unless bridges of comb are desired between the lower combs and the brood-frames.

When a super is filled, or so nearly filled that only the outer sections lack a little of being finished, it is taken off, and the unfinished sections of several such supers are put into a super to be put back on a hive for the bees to finish.

As the honey harvest ends with white clover in my neighborhood, all supers are taken off whenever the bees cease to store from white clover. All the bees gather after that time they are welcome to keep for their own use; and, if an occasional year comes when they get buckwheat or something else to such an extent as to crowd the brood-nest too much, the extractor is brought into play. If, on the other hand, they are scarce of stores they are fed quite early in the fall.

Marengo, Ill.

For the American Apiculturist.

METHOD NUMBER FIVE.

G. W. DEMAREE.

STORING COMB HONEY: BEST METHODS.

The first point to be discussed is "preparation."

I would commence the year before, always keeping a year in advance. If my bees are well managed the season before, so as to be strong in young bees, and bountifully supplied with good natural stores for winter, I may reasonably expect my bees to be strong in the early spring and fully up with the times, and ready for efficient service.

These needful preparations in my locality are well nigh essential to good strong colonies ready to take the advantage of the entire harvest. After I have insured these conditions I have only to close up all upward ventilation in the early spring, by putting sheets of paper between the quilts at the top of the brood-frames and contract the entrances to the hives so as to economize the heat, without which the bees cannot breed rapidly. There is no danger of moisture accumulating in the hives at this season of the year. I think that this is all I can do to help the bees through the trying season. It is all that I can do to promote rapid brooding, provided the bees have an abundance of stores so as to feel free to use them for their most rapid growth into strong efficient colonies.

Some good beekeepers have reported excellent results from "spreading brood," and inserting empty combs between, and others think that inverting the brood-chambers has hastened the results, but such treatment is positively a disadvantage in my locality, and therefore I advise that each apiarist seek to be his own judge as to what is best in his particular case, in the light of his locality and surroundings.

The next point is the hive, and the surplus arrangements. All good movable-frame hives not less than seven, nor more than ten inches in depth, if they have ample room for top storing will give much

the same results if they are properly managed. I have used frames from four and seven-eighth inches in depth, to ten in depth. I have used the former size frame for taking liquid honey for eight or nine years, adjusting them in cases arranged to duplicate each other on the tiering-up plan, and I have used them from the bottom-board up. A deeper frame is not suitable to the tiering plan. But, when it comes to the deep brood-nest and the shallow tiering brood-chambers, the choice is not made from the results obtained, because there is but little difference in this respect. Cost and labor must settle the matter.

We want a brood-chamber that can be enlarged and contracted within certain limits. This may be accomplished by tiering up and down, using the shallow frames, or it may be done by contracting at the sides of the deep frames. I have found from careful trial that the results as pertain to the honey crop is much the same, but the latter is cheaper and requires less fuss and real labor.

In the one item of tiering the surplus cases on the brood-chamber and on each other, and the removing of the finished honey, shows a marked difference in favor of the vertical or deeper contracted brood-nest. When tiering up, or removing full cases of honey I wish to make the bulk of the bees retreat below so as to be out of the way. This is done by means of the smoker. It is a fact that with a brood-nest below the cases of some depth the bees handle much better than they do where a very shallow brood-chamber is under the surplus cases. For in the one case the bees may retreat downward, driven by the smoke, while in the other case they can only spread out to be in the way of the operator or run out at the entrance.

Bees are very annoying when they spread out over the edges of the hive when tiering the cases or performing any needed work with them. Hence I prefer side contraction and enlargement. An important point in comb honey producing is contraction of the brood-chamber. The brood-chamber must be contracted at the beginning of the honey season or in an early stage of it, if the best results are to be hoped for. But what is the best way, is the important question. I claim, and I have tried it side by side, that a brood-chamber "contracted" with combs of sealed honey is as effective as if contracted with division-boards or dummies. The aggregate results are much the same. In the one case you have more honey in the honey store-room, but a poverty-stricken apiary. In the other case you have less surplus honey, but you have the entire crop, and your apiary provided for, without the wear and tear of feeding back your supposed gain. I want my apiary self-sustaining.

The rest of what I have to say in this article is plain sailing. I want my section cases made just one tier deep and so made that they will duplicate each other. I use full sheets of foundation in the sections or only starters, owing to the fitfulness or steadiness of the honey flow. If the honey flow is rather slow, but steady and continuous, bees will build their store combs as fast as needed and at a profit over foundation. But if the honey comes in a fitful rush, full sheets in the section pay well. When my colonies become strong and the brood-chambers are "contracted," that is, have no storing room in them, one case of sections goes on immediately, and when the case is about half full, if the bees show signs of being crowded for room the case is raised and an empty

one is put under it. If there is no crowding of the bees at the entrance of the hive, the first case is left in position till it is about two-thirds filled before it is raised.

I am not in a big hurry to remove the finished honey at the top, unless I am scarce of section cases. It improves the keeping quality of honey to leave it with the bees awhile after it is sealed, and honey in the top tiers is not likely to be soiled in a short time. It is a matter of good judgment to know just how long to "tier up," as our seasons vary as to length of time. Now comes the nice point. We want as few partly-filled sections at the close of the season as possible, and to reduce the number as much as possible, I must guess at the proper time to begin to tier *down*, that is, collect from the cases all partly-filled sections and group them together so as to leave the bees to finish them up, instead of spending their time in starting new work to be left half finished at the close of the season. In tiering *down*, I reduce the number of cases till only one case is on each hive. For instance, if there are two cases on a hive and one of them will hold all the sections that have honey in them, they are transferred to the one case, and the other case with the empty or merely-started combs, set aside for the next season.

By this management nearly all the sections are completed.

Christiansburg, Ky.

For the American Apiculturist.

WILL INVERTING THE BROOD NEST PREVENT SWARMING?

S. CORNEIL.

I notice that Prof. Cook's article on the above subject is going the rounds of the bee papers. He says that swarming can be precluded by this simple work of inversion, that the bees at once cut away or remove all queen cells as soon as the combs are turned upside down, and that by thus inverting the hives once a week swarming is prevented. I think it proper to say to bee-keepers who may have confidence in this "innovation," because it is advocated by so high an authority as Prof. Cook, that if they hope to run their bees without swarming, by simply inverting the brood-nests, they will certainly be disappointed.

Last season I ran sixty-four stocks for comb honey. Before any swarming occurred I inverted all the brood-nests except one. This one was allowed to cast a swarm which was returned without the queen, and the brood-nest containing sealed cells was at once inverted as an experiment. Two days later the combs were examined and a living queen was found in a cell which happened to be in a nearly horizontal position between the comb and what had been the bottom bar, but now the top bar, of the frame. Another sealed cell, now pointing upwards, was cut open and the queen was found to be dead. At the end of another day the remaining sealed cells were examined and the queens were all dead, but the cells were still uninjured. In other hives which had been inverted before the cells were sealed, it was found that before capping the bees had turned the points of the cells either horizontally or

slightly downwards. In some cases sealed cells were torn down and others pointing in the opposite direction were started instead. While I was engaged in making these examinations a swarm issued from a hive which had been inverted a second time only the day before. On opening the hive I found that the bees swarmed leaving only queen cells containing eggs. I said to myself "that settles the question. Inverting brood nests won't prevent swarming in my own bee-yard and I don't believe it ever did prevent it to any considerable extent in the yard of any one else."

A few years ago I lost $100 worth of bees by following Prof. Cook's theory that while in winter quarters bees require little or no air. In 1885 I lost, I do not know how much, by hiving swarms run for comb honey on empty frames having starters only, as recommended by Mr. Hutchinson. The results were that I had brood and pollen in my sections and one-third drone comb in my brood-nests, which consisted of only four frames of 160 square inches each, besides being annoyed by the swarms repeatedly swarming out. Last season, I inverted the brood-nests to prevent swarming and not only failed, but the comb in my beautiful sections, intended for exhibition in England, was darkened by being placed so near the blackened combs, after the brood-nests were inverted. I have resolved, for the hundredth time that in the future I shall stick to the methods which have been proved reliable and allow others to follow the new-fangled "innovations."

Lindsay, April 25, 1887.

[While Mr. Corneil has selected Prof. Cook as a target to shoot at, I feel like taking a large share of the above remarks myself, as Prof. Cook's experience and my own regarding inverting the brood-nest has been the same, and I have said as much as any one in favor of inverting the combs as a preventive of swarming.

Instead of inverting the combs once a week to prevent swarming, the operation should be performed as often as once in each four days. However, I have but little to say in favor of such a plan; as, like all other methods for preventing swarming, inverting the brood-nest is not thoroughly practical, as only the experienced beekeeper would care to practise it, unless the method given by me last year in "Gleanings" and the "Api" is used.]

For the American Apiculturist.

A FEW COMMENTS.

Z. T. Hawk.

BROWN BEES.

In the March number of the Am. Apiculturist, in reply to query No. 11, Mr. C. W. Dayton speaks of "brown bees in this country that are not Germans; perhaps they came here when the Indians came. They are natives of this country as the Italians are natives of Italy," etc. Is Mr. Dayton correct in this statement? Years ago I read somewhere that in the westward march of settlement the honey bee preceded the white man as the advance guard of the civilization that followed close behind; that, like the white man, it was new to them and on account of its steady march toward the interior, heralding with absolute certainty the near approach of white settlements, it was known among the Indians as the "white man's fly." I have long been under the impression that none of the domestic races of the honey bee were indigenous to this continent. Perhaps the editor of the Apiculturist, who resides so near the locality from which the strongest current of civilization has flown, can give us something definite.

REVERSING FRAMES.

I have read with interest Mr. Simmins' account of results from inverting combs. I do not call to mind that any American writer has complained of the bees cutting

away the comb from the bottom-bar of reversed frames. Perhaps there have been such complaints, but I have not seen them in print. There are combs in some of my hives eleven inches deep by thirteen long that have been in use two seasons, during which time they have been inverted several times, but they show no signs of passage ways cut by the bees. They are solid sheets from top to bottom. Some of these were built on foundation and some are transferred combs. No, they are not quite solid sheets of comb either, for each has a hole about half an inch in diameter right through the centre. Perhaps that is what saved the edges from being cut away. Mr. Heddon has undoubtedly reversed more combs than any other man in America, and we would like to know what has been his experience in this matter.

THE EDITOR'S ADVERTISEMENTS.

It is a cause of regret to me, and I doubt not to many others among your subscribers, that you have withdrawn your advertisements from the columns of the APICULTURIST. You place yourself at a disadvantage with your advertisers, when, in fact, you are entitled to the place of greatest prominence in the columns of your journal. You have the expense of publication to bear, and if, as you say, it is necessary for a bee journal to be backed by the supply business in order to live, then why not make a reasonable use of the advantage at your command? Are you not also placing the APICULTURIST at a disadvantage with contemporary journals? Surely a vigorous, paying existence, like that enjoyed by "Gleanings" and the "Am. Bee Journal," though undoubtedly depending upon the supply business to the editors, is much to be preferred to the sickly, uncertain life of a journal that is a continual expense to its owner. It is the everlasting "puffing" of an editor's goods as better than those offered by any one else that is objectionable. A page or two occupied by a simple price-list is surely your due and could hardly be objected to by your most radical advertiser.

Denison, Iowa.

For the American Apiculturist.

NOTES FROM CALIFORNIA.

A. NORTON.

The season is so far rather dry, though the time for rains is not yet passed.

The question of adulteration can hardly be raised against our honey; for honey here is cheaper than glucose.

Bees were bringing in pollen at this place on New Year's day, probably from the Australian blue gum tree *Eucalyptus ciliaria* (a pasture plant of geranium family and as abundant in growth as white clover) which blossoms in February, followed soon by the willow. This year neither blossomed till March. These make dark honey; together with miscellaneous bloom, they keep bees busy till sage and buckeye, which furnish abundance of thick but nearly water-colored honey. I consider sage honey the finest flavored I have ever seen. It is sometimes so thick as to be poured with difficulty from a small vessel.

It is not always when bees are prone to take wing that they are most vicious. The bees that cling to the comb however, can not be called ill tempered. An argument that they are so might be carried further thus:—Dog number one is more ferocious than dog number two. Yet when an intruder comes,

number two leaves the door-yard and comes in contact with the interloper, and a case of biting results. But ferocious number one clings to his position in the yard paying no attention to any one and all goes well. Now the tendency to go out of the gate is the chief factor, etc. Carniolan bees dislodge from the comb as easily as any others. Yet they will seldom sting so we are told. I have seen of this race only half-blood Carniolan and black bees which could scarcely be handled so as to keep on the comb, yet no stings. Have handled pure Cyprians when they were not viciously inclined; yet the faintest breath, or slightest jar, would nearly clean the comb, and they would fly around me like a swarm. But they would shortly return to the hive without giving me a sting. Have had this occur often. When they do want to sting (Cyprians) they dart at me from comb, entrance, or anywhere without waiting to be dislodged. It seems to me there is as much difference between dropping (or jarring) from the comb and darting from it as between running from a thicket like the deer, and springing from it like the panther. With Italians or any other bees while remaining quietly on the combs, you can place and move your hand among them with impunity; and so long as you pinch none, though they cover your hand, none will sting.

I am a little surprised that so respected an authority as Dr. Tinker should say that the Carniolan is a cross between Cyprians and blacks. How can they be? and why? Carniola is in extreme western Austria. Bees could not of themselves have emigrated over the vast intervening country ridged with many independent systems of high mountains. In the days of Roman supremacy, Carniola was out in barbarism; still more so was this the case in earlier days of Phœnician commerce. Hence there was no chance for transportation. Even if some Cyprians had been transported, the type would have been quickly lost, for a few bees taken among a great many don't make much change. Still again, the predominant feature of Carniolans—gentleness—is as hard as ever to account for because it is in excess of that trait in either Cyprian or black. Carniola in west Austria and Liguria in northeastern Italy, the stronghold of Italian or Ligurian bees, are closely adjacent. In a state of nature races and species are not formed by crossing, but by variation and natural selection. The Carniolans might be less modified descendants of the same offshoot that in Liguria developed still farther into the Italian. Or they may be from another offshoot still. We don't know whether nature produced black or yellow bees first. We cannot know the answers to any of these questions, and it don't matter much; for so long as we know correctly the merits and demerits of the bees in our hives to-day, we don't care so much what their ancient progenitors were like, unless we can learn with some certainty. I beg Bro. Tinker's pardon; for I don't like to question the views of one whom I regard as vastly better versed in bee matters than myself.

A close counterpart of the Simpson honey plant (or *Scrophularia nodosa* of the East) grows here. It is the *Scrophularia Californica*. It so much resembles the former that I cannot see how botanists call it another species. In the morning up to sunrise I can shake large drops of honey from the blossom, by striking it against my hand. Yet bees work on it but sparingly. Hence I am led to

wonder whether good reports of the Simpson honey plant don't spring from its blooming during times that other honey pasturage is scarce.

Gonzales, Cal.

For the American Apiculturist.

GOOD NATURE.

JAMES HEDDON.

Good nature is one of the cheapest and easiest obtainable commodities in the world. It is one of those splendid stocks, which, like love, pays a large per cent to both donor and receiver.

I had no intent nor thought of arousing the ire of Mr. Swinson. "Whom the gods would destroy they first make mad."

I should be much better pleased to see one or two writers, who make it their business to prejudice the public against me and my inventions, many of which they claim as their own, adopt the policy of good nature.

I want to commend you for your words of wisdom, uttered in your editorial concerning the use of the extractor, cheap bee papers and cheap supplies. Your statements are true, and your reasoning good.

Dowagiac, Michigan.

"MUST THE EXTRACTOR GO?"

WHAT WOULD BE THE EFFECT IF THE EXTRACTOR WERE LAID AWAY?

EDITOR AM. API.

Please get some of your numerous correspondents to answer the following questions.

In your opinion would it be good policy to discontinue the use of the extractor as suggested by the editorial in the May No. of the "Apiculturist?"

Do you think the price of honey would advance, or what would be the probable effect should the extractor by general consent be laid away?

AN OLD READER.

OPINION OF PROMINENT BEEKEEPERS REGARDING THE MATTER.

ANSWER BY R. L. TAYLOR.

"An old reader's" questions concerning dispensing with the extractor deserve consideration.

ANSWER BY DR. J. L. TINKER.

I have never been favorable to the use of the extractor and think it has done beekeepers more harm than it has good. I fully agree with the editor on this question. If the extractor were laid aside there is no doubt but that there would be a general advance in the price of comb honey.

ANSWER BY JAMES HEDDON.

Yes, if it could be agreed upon by beekeepers, it would be a good thing for our product if less than one-tenth of the extracted honey, now being produced, was raised in the future.

I have no doubt of an advance in the profits of honey-producing, if extracting were nearly all abandoned. I have grave doubts of such being done.

ANSWER BY DR. C. C. MILLER.

No. I can hardly believe the intelligent use of the extractor should be discontinued. I make very little use of the extractor, but I suspect in some places it is the wise thing to raise little or no comb honey.

I doubt if comb honey would advance in price if the extractor should be stricken out of existence, but it is hardly worth while to speculate upon this, for the extractor will not likely be laid aside by those who find its use most profitable.

ANSWER BY G. W. DEMAREE.

Why not propose to discontinue the honey business altogether? It would be as possible to regulate the one as the other. "Strained" honey has been in use more than a thousand years; and there are men in the mountain counties of Kentucky now swashing honey out of the combs, brood, pollen and all, by the barrel. The honey machine gives us liquid honey in its purity; why then should we want to get rid of it? Those persons who can not produce honey at present prices had better retire and try something else. I am selling my honey at a price above other commodities.

ANSWER BY R. R. RUSSELL.

If the extractor had never been invented, beekeepers in general would have made just as much money without it. It has had the effect to lessen the price of honey to the minimum by increasing the supply perhaps beyond the legitimate demand.

The extractor comes under the general law of all labor-saving machines and tends to benefit the consumer rather than the producer. However, it has come to stay like all important inventions and to kick against it would be like kicking against the wind. It will never be laid aside by general consent, therefore I would use it if it seemed to be for my individual interest so to do.

ANSWERS BY J. E. POND.

I have long been of the opinion that the use of the extractor has been detrimental to the best interest of the honey producer. It has caused rivalry between competitors in the matter of obtaining the largest surplus, and as a consequence much unripe honey has been put upon the market, of course with bad effect. The extractor, however, I consider the best friend of the beekeeper, and one which he cannot do without, but it must be used with discretion; and to obtain the very best results in connection with the obtaining of surplus comb honey, I do not think it would be good policy to discontinue the use of the extractor entirely, but must insist that unless it is used with judgment it will greatly injure the business.

I do not think either that the price of honey would be affected at all either by the use or non-use in a respectable way of the extractor, neither do I think if it should be laid away by general consent, the price of honey would advance. As yet, honey is considered a luxury, and as such its price will fluctuate greatly. At the present time, or in fact at any time, we must expect that the same laws and rules will apply to the sale of honey, that apply to the production and consumption of any other article of merchandise, and the sooner we realize that fact, and confine ourselves to the task of producing it the most economically, and putting it upon the market in the best possible shape, the sooner shall we put it upon a sound basis as a staple article. As yet, the world as a whole knows but little of the value of honey as an article of food, or as a medicament. Our bee journals are doing all they can in this direction, but with the lack of support they find from those chiefly interested, viz., the beekeepers themselves, it is a wonder to me that they do not get disgusted and quit publishing their papers. In this matter I speak whereof I know, for I have had some little experience in this very direction. My advice is, stick to the extractors, but use them with judgment and discretion.

ANSWER BY W. M. KELLOGG.

"In your opinion would it be good policy to discontinue the use of the extractor as suggested by the Editorial in May number of Api? I had intended to send an article on that same editorial, and I will say a great big NO. Each one will answer from his own locality and market. With my crop of over 7000 lbs. from season of '86 to date, I have sold of comb 914 lbs. out of 1,360 lbs., and of extracted 4,181 lbs. out of about 5,940 lbs. Of this the comb has gone slowly, by coaxing and much talk, in little dribs at fifteen cents, with considerable protest at its being so high, while with the extracted it has been an easy sale at ten cents and not a word against the price, many wondering why I charge more for comb than for extracted. Again, it has been poor people who bought, as a rule, the extracted, while it is mostly the town people who bought the comb as a dainty dish to set off the table for company. Of course a few of the poorer class bought comb, and some of the better able bought extracted. Now suppose I had produced only comb honey, and sold only at the same price of fifteen cents. I should probably have sold comb honey to some who wanted extracted but could not get it. My sales would not have gone above 1,500 lbs. at that figure. Well, what if I had put the price at twenty-five cents as suggested? The result would have been a few, and a *very* few, of the better-able class would have bought, under worse protest than now, a few hundred pounds; the poorer class, scarcely a pound. With first class sorghum, good enough for any one to eat, at fifty cents per gallon, maple syrup plenty at $1.25, and good sugar from five to seven cents per pound, the sale of comb honey at twenty-five cents in this vicinity would be very small. I think all this discussion in regard to forcing people to buy what they don't feel able to buy, by reducing the production among those who are already in the business, by combination or otherwise, is time and words lost. Our products will have to stand the test of demand and supply like any other. In my opinion, instead of the extractor being the cause of the decline of the price of honey, I think it is more to be laid at the door of those who have "boomed" beekeeping to its death. The more producers the less consumers. I used to sell comb honey at twenty-five cents, and extracted at twenty cents and had no trouble till others got at it and knocked the bottom out without the asking by consumers. But the cheapening of everything is the main factor in the case. The large producer is spoken of. Where is he? Point him out (don't refer to California). *Name one man* who lives entirely by the sale of honey alone. I don't know of one, do you? No sir, they each and every one add something else to the production of honey. Comb honey with me costs more than twice that of extracted. The question raised as to fruit, in May Api is a queer one to me. When berries, here, are scarce and high, we all buy less, and my honey sales are very much larger. When fruit is very plentiful and cheap, *my* family get all we can possibly use and put away. But when strawberries are twenty-five cents a box, we can get but few. Last season several barrels of cranberries were sent to our city without orders, with the injunction, "*sell them*". The grocers put them at five cents a quart all over town and they went like hot cakes to hungry men. I am willing to fall into line in any way to make beekeeping more profitable, but it is

profitable enough to me as it is, and I don't ever expect to see the extractor laid on the shelf.

NOTES FROM THE BAY STATE APIARY.

HENRY ALLEY.

We stated in our last notes that in all probability no more of our bees would be placed in a cellar to winter. Our experience since the bees were taken from the cellar has been such that we have finally resolved never to put another colony of bees into a bee-house, cellar or other place, except on summer-stands, to winter. Those wintered in the cellar, where the temperature did not go below 45° and stood for one hundred days at 50°, are not at this date half as strong in numbers as those that wintered on the summer-stands. Although the colonies seem weak, yet they work vigorously, and perhaps by the time the honey harvest begins they may be as strong as any in the yard. The colonies that wintered on the summer-stands, are very full of bees, and as they were packed in double-wall hives consumed no more honey than those colonies placed in the cellar.

APRIL WEATHER.

The weather during the entire month of April was very unfavorable for bees. We had several snowstorms, and it froze hard, at least eighteen nights during the month, and what was worse than cold nights, were the cold northwest winds which blew almost a gale nearly one-half the time.

QUEEN-REARING.

Owing to the unfavorable weather during April the bees were kept back and none of our colonies were as strong at the usual time queen-rearing is commenced as we like to have them; consequently cells were not started until about one week later than we generally commence queen-rearing. At this date (May 20) cell-building is going on rapidly, and no doubt should the weather continue favorable we can commence to ship queens during the first week in June.

THE OUTLOOK FOR HONEY.

Fruit trees give promise of blossoming very heavily, and as this vicinity is a fruit-raising locality, our bees will find plenty of employment in a few days. We do not look for a heavy crop of white clover, as last season we had an unusual heavy blossom of that best of all flowers for the bees to gather honey from. A succession of such blossoms seldom follows, though there may be enough of white clover to furnish all the forage several hundred colonies can work upon. Though there was more clover last year than ever known before, the bees did but little in gathering honey from it. The weather did not seem to be just right for the nectar to secrete in the blossoms. I have known bees to gather honey very fast when little or no white clover could be seen, and on the other hand have seen the fields almost white with clover, and the bees doing nothing. All depends upon the state of the weather.

THE FIRST NEW HONEY.

Tuesday, May 3, was a very warm day, and the bees gathered the first new honey from the blossoms of the soft maples. There is very little nectar secreted in soft-maple blossoms, and the show of honey in the combs, even after the bees have worked on them a week, is quite small.

AN EXPERIMENT.

The following experiment will be tested in the Bay State Apiary the present season:

The first swarm that issues will be hived in the usual way. In case another swarm comes off the same day or on the day thereafter, it will be hived on the combs that the first swarm came from, but not till after the first hive has been opened and the queen cells removed. In this way increase may be prevented and the bees kept at work in the boxes.

Of course the combs must be examined very closely for queen cells and all destroyed or certainly all removed,—though it is my opinion that the bees will permit the old queen which came off with swarm No. 2 to destroy them instead of swarming again from their new home.

If this plan works as well as I think it will, I have no doubt it will be generally adopted by bee-keepers who have all the bees they desire to keep.

I will suggest that the readers of the "Api" test this method and report in the fall.

So far as I know, this plan is new; if not, there is no great damage in thoroughly testing it the present season.

Wenham, Mass.

QUERIES.

Answers by Practical Apiarists.

BROOD-REARING vs. HONEY GATHERING.

MANAGEMENT OF COLONIES JUST BEFORE THE HONEY HARVEST BEGINS.

Query No. 25. In Mr. C. W. Dayton's article on page 89 of April issue he says that in his section the honey harvest lasts but thirty-seven days, the length of time it requires to get bees from the new-laid egg to work in the field.

The above suggests the following query: how would it do to confine the queen to one or two combs at such a time, by using perforated zinc division-boards, keeping the queen on the few combs for about three weeks? Would not such a method retard or prevent swarming wholly? What objection can there be to such a practice? READER.

ANSWERS BY IRA BARBER.

In answering query No. 25, I would recommend feeding thin hot food for three weeks before the honey season commences in all sections where the honey season lasts only twenty or thirty days. In this locality, it is quite a common thing to have the season cut down to ten days that the bees get more than a living, and in that time get a large crop of honey, but if our bees were not on hand in strong forces, failure would have been the result.

I have never confined a queen on a few combs near the swarming season and cannot say what the effect would be.

ANSWERS BY DR. C. C. MILLER.

"Reader" has a large field before him, but I hope he'll keep to work at it. If he reaches a desirable plan to prevent swarming, (and I think it will sometime be reached) he will lay beekeepers under a heavy debt of gratitude; but his present plan will not be a success. In the first place, he can hardly take a surer course to make the bees swarm. As soon as the queen finds no room to lay, the swarming fever will almost surely be induced if the harvest continues. Secondly, the young bees seem to be needed, and without fully understanding all the reasons, I have found by a large number of trials that taking away the queen as long as three weeks will not give good results.

What is wanted is a plan that will prevent the bees from wanting to swarm while the queen keeps right along laying.

ANSWERS BY DR. TINKER.

We are not to count thirty-seven days from the egg to the working bee, as inferred in the query, although we do not get field workers for about thirty days from the egg. We should count only twenty-one days in making all calculations about non-producing workers. For instance, the main honey flow in a locality ceases about July 10th, as in this section. Eggs laid twenty-one days before or June 19th, would give us non-producing workers. Young bees begin work in the hive very soon after hatching, first as nurse bees and then as wax workers, and it is my opinion that by far the greater part of the work performed by a colony of bees is in the hive; hence it always happens that the more young bees in a colony the more field workers can be spared.

As to limiting the work of the queen, it is well known that Italian and black queens begin to contract their egg-laying about June 20, and for the next forty days, it will be at the minimum rate. About Aug. 1, the brood area is again enlarged as there is also usually a second crop of drones reared. With these races of bees it certainly could not be very profitable to interfere with them in the height of the honey harvest with perforated zinc division-boards. I doubt if the advantage gained would pay the cost of the zinc, let alone the matter of time and labor. The objection, therefore, would be that it would not pay.

With Syrians, Cyprians, and Carniolans, and all cross-bred bees on the maternal side from these races which rear brood extensively as long as a honey flow lasts and never clog the brood-chamber with honey, the practice of contracting the work of queens at proper times is advisable. But my experience is against contracting with division-boards, dummies or anything of the kind, on the score that it does not pay, if we take into consideration the cost of the appliances, and the time and labor to use them. Right here comes in the question of hives and the great advantage of sectional hives and queen-excluding honey-boards. Any revolution in our method will be in this direction for in no other way can we so profitably manipulate brood-chambers and limit the work of queens without serious disturbance of the bees in the active working season. I should not care to confine queens in any case inside the hive with a view to preventing swarming. An arrangement like Alley's trap to control swarming, that we can get at readily, is another thing. But it does not prevent swarming or even retard it. It simply traps the queen in coming out and makes the attempt to swarming abortive, if the apiarist is not on hand to attend to it. Confining the queen in the hive on one or two brood combs, leaving brood in other combs, would not prevent the rearing of queens cells either in- or outside the presence of the queen, and swarming or the attempt to swarm in due time.

THE AMERICAN APICULTURIST is not a local paper. Its circulation extends into every state in the Union and largely in the western and middle states. We also have a good number of subscribers in Canada, and our foreign circulation equals that of any American bee paper. The Api is as much a national paper as any bee journal published.

THE MANAGER'S CORNER.

We wish to give notice that no more hives of any kind can be supplied from the Bay State Apiary without considerable delay after the order is received. We also wish to say that all the colonies of bees in the Bay State Reversible Hives we had for sale have been disposed of.

Our thirty-two-page price-list is the October number of the APICULTURIST, which we are sending out as a *special* edition. Prices of all supplies we have for sale may be found in that number, which is sent free to all who apply. If this meets the eye of any one who has not received that most important number of the API, by all means send your address on a postal card, for it, and at the same time if you have a friend who keeps bees send his address also.

Bees in some sections of the country have wintered badly, while in other localities reports most encouraging are being received. On the whole, bees have wintered better than the average for the past ten years. Many complain that the bees seemed to desert the hives and leaving the combs well filled with honey while but few, and in some cases no dead bees were found.

One well-known beekeeper writes that he is about discouraged on account of loss of bees in winter and low prices for honey. Wonder if our friend would not be in favor of throwing the extractor to the dogs.

Our friends have no idea how much it would help us if each reader for the API would send us the name of one new subscriber for the APICULTURIST.

Of course, no one has forgotten that we send the API one year for one dollar and also mail free to each subscriber, new or old, one of our Drone and Queen-traps. If you never have seen and examined one of these most useful apiarian implements you have no idea how much has been lost to you without its use. Send and get one or more. Don't be annoyed by your bees running away, or going up on a high tree when they swarm. Use the trap as it will save time, trouble, expense and bees, and you will have a most comfortable time during the swarming season.

Our friends who desire to visit the Bay State Apiary will be welcome to do so. It gives us pleasure to talk of and explain our methods for rearing queens, or to give information concerning bee culture to the extent of our thirty years' experience, to all who may call. Our method for fastening foundation in frames and sections, opening a hive and finding the queen in full or nucleus colonies, and in fact hundreds of things too numerous to mention here will be shown all who visit our apiary. The manager of the API does not have an office from which he excludes his friends nor does he employ boys to wait upon and show visitors about his apiary. Generally from 10 A.M. to 4 P.M. we are at liberty to attend to all who call. If those who intend visiting the Bay State Apiary will send us a card several days before they come they will be most likely to see us. About June 15 several hundred nuclei hives will be in running order, then we can show and explain queen-rearing and interest our visitors to almost any extent.

We have received, through mistake of some one, 1000 $4\frac{1}{4} \times 4\frac{1}{4}$ sections. There is no name of the shipper or other marks to indicate from whom these came. We found them at the depot with other goods. Who can explain?

We can say this much regarding the sections. One package of 500 has been opened and although we have bought and used thousands of one-piece sections I never saw such fine sections before. Who ever sent them will get an order from here as soon as the shipper's name is known.

Some person in Whitehall, Ill., sent one dollar to this office in January last. We cannot fill the order as no name was given.

Some people do not seem to know where they live, as several calls for the winter essays have been received, and mailed to the address given. In a few days they are returned inscribed "no such post-office in the country."

The manager of the APICULTURIST tenders thanks to those who have so liberally favored him with orders the

past few months. We assure our patrons, that the API has been highly favored by its numerous friends and subscribers by orders for supplies of all kinds. It really does not appear to us that there are many of our readers who are opposed to the manager and publisher dealing in beekeepers' supplies.

Our own advertisements have been removed from the pages of the API in order that all who favor us with advertisements may reap the full benefit of the money they invest in the API.

A good many have sent for our price-list and took the occasion to express regret that we have taken our advertisements from the API. I am not sure that the movement was a wise one, but the experiment seemed to me to be worth trying, for a while at least.

If any one desires our price-list, and also the essays on wintering bees, just send your address on a postal card for it. The essays are the same as sent out in the October number for 1886, which occupy seventeen pages, with the addition of fifteen pages of our price-list.

The special number is neatly printed and is likely to be preserved for a long time for the valuable essays it contains.

We cannot furnish any more Bay State Hives or Reversible Section cases this season. The large stock which were gotten out last winter have been sold For the next four months our attention must be given to rearing queens; though most other goods found in our Price-list can be furnished promptly. Price-list of such things sent to any. Send address or a postal card for it.

"Subscription Expired" will be stamped on the wrappers of all whose subscriptions expire with any number of the APICULTURIST. If the reader desires the paper continued we shall be glad to do so, provided he makes known his wishes by dropping us a postal card. Otherwise the "APICULTURIST" will be discontinued when the subscription expires. We invite all to renew and send us with their own subscription at least one new one.

NOTICE.

We find that not one copy of the APICULTURIST, number 12, Vol. IV, is left in our office.

Will some of our readers who do not care to preserve that particular number return it to us? We will gladly pay twelve cents each for twenty-five copies, or in return will mail a copy of this issue to any friend whose address may be sent us.

GLEANINGS FROM CORRESPONDENCE.

One of the best-known beekeepers in the world, wrote us a few days ago, as follows:

"I wish to congratulate you on the excellence of the API. It is one of our most valuable beepapers I was especially glad to read what you say in reference to Mr. Langstroth and his hive. What folly for any one to say that Mr. L. was not the inventor. Such statements confront truth, justice and the intelligence of the beekeeping world."

DEAR SIR:

Your drone and queen trap just received by express. Thanks. To those who practise clipping the queens' wings, it will be a great help in swarming time in automatically caging the queens and thus preventing them from getting lost in the grass.

JAS. ERWIN.

Hitchcock, Ind.

MR. ALLEY:

I would not take $5.00 for the queen you sent me last year. Please send me the API and another queen as soon as you can. $1.50 enclosed.

WM. R.

Christiansburg, Ky.

FRIEND ALLEY:

The API is certainly an honor to its proprietor; you have made it a great success. Your plan of having a set of articles published in a single issue on "Wintering" and another set on "Storing Comb Honey," etc., is a master piece of wisdom, as any one of such *numbers* is worth more than any book ever published on any single topic on bee culture. G. W. DEMAREE.

Ida Grove, Iowa.

FRIEND ALLEY:

I moved my bees on April 5 and 6 according to your directions in the January number of API. I have fifty of your drone and queen-traps. I like them first rate.

E. R.

Lawrence, Mass., Apr. 4, 1887.

MR. ALLEY: My bees have had a good flight to-day. I have looked them over, and found them in good condition. I saw one chap bringing in pollen.

The APICULTURIST is far ahead of any bee publication I have ever seen, and I have seen quite a number.

Yours truly,

CHAS. E. D.

Walton, Ky.

FRIEND ALLEY:

The queen I purchased of you two years ago is still doing active business and has about twenty daughters in my yard, duplicates of herself, besides many others elsewhere. One of those sent last fall is prospering finely. I have two of her daughters, very fine ones.

Bees came through the winter in fair condition, but the spring is wet, cool and frequent frosts, and I am afraid the colonies will not get strong enough to make good use of the honey harvest.

L. J.

Farmington, Mich.

MR. ALLEY:

Please continue the API to my address. I can't get along without it, it beats them all. Register my order for a queen to go with it.

A. R. W.

To Advertisers.—One of the advantages in advertising in the AMERICAN APICULTURIST is the fact that the proprietor or manager of the "Api" has no advertisements in its columns; thus none of those who advertise in our paper do so in competition with us.

Bear in mind that the AMERICAN APICULTURIST is not a local bee paper. We have more subscribers in any one of the western states than we have in all six of the New England states together.

THE DISAPPEARANCE OF QUEENS.

C. W. DAYTON.

THE report in early spring in my locality was that bees had wintered well. Many removed them from the cellars early in March without any losses, but since that time spring dwindling has been at work, so that the losses are quite numerous up to this date.

Many report the disappearance of queens from some unknown cause.

These losses may be partly accounted for from the handling of the combs and opening hives in cloudy or not very pleasant weather.

From the time the colonies are removed from the cellar until the 15th of June it is dangerous to queens to handle the bees at any time other than in clear and pleasant weather.

I have opened hive after hive on a cloudy day and on the next day found them minus queens and I have known that rule to work in two colonies out of three.

In one instance I opened a hive ten times on ten different cloudy days and the queen was balled every time before I left the hive. Each time the queen was placed in a cage for an hour or two when she was again released and remained unharmed. At last to ascertain whether she was balled for protection rather than harm she was allowed to remain balled and was found dead at the entrance the next morning.

In my first season of beekeeping being much interested in the working of the hives they were examined often and at any time, and by June 1 only eight queens out of thirteen remained alive. The following seasons such losses were less and less until at present I seldom

lose queens that come through alive and that out of hundreds of colonies.

At one time having just fifty colonies in fine condition, and set out in an order five hives wide and ten hives long, thinking to test the fact, on a cloudy and misty day I went to a central colony took the combs out and returned them. The next examination revealed a queenless colony.

This experiment I have tried several times and while the loss is not absolutely certain it averaged three out of four. I might give many other instances that have come under my observation, but deem it useless to multiply words and advise all not to look into the hive unless the sun shines brightly and it is warm.

Knowing of some apiarists who choose to handle the combs when it is cloudy and are heard to complain of such losses of queens caused me to give the above experience.

Bradford, Iowa.

All who Subscribe for the APICULTURIST, at any time, will receive one of our combined Drone and Queen-traps free by mail. This is our method of introducing the APICULTURIST and our Drone and Queen-traps into every apiary in the United States.

Those who receive the trap as a premium must not expect to get the Handy Book or a queen for fifty cents, as the profits are so small that only one premium can be given each subscriber.

TO ADVERTISERS.

We will accept of bees, sections or foundation in exchange for advertising space in the APICULTURIST.

H. ALLEY.

ADVERTISEMENTS.

TERMS FOR ADVERTISING.

During the balance of the year we shall insert advertisements at the rate of ten cents per line for one insertion, or three insertions for seven cents per line. All advertisements to run six months or longer will be charged but five cents per line.

We are sending out each month about 2,000 sample copies of the APICULTURIST. In our experience we have found that those who receive sample copies are most likely to answer advertisements.

In proof that the API is a good advertising medium we have only to refer to those parties who keep their ads. running in our columns the year round.

ARTHUR TODD,

1910 GERMANTOWN AVE., PHILA., PA.

Colonies of Bees, Queens, Hives, Foundation.

A full line of Supplies always on hand.

187-tf. ARTHUR TODD.

A CHEAP SMOKER.

Martinsville, Ohio, Apr. 11, 1887.

Messrs. BINGHAM & HETHERINGTON,
Abronia, Mich.

Enclosed find $2.50 for two large 2½ inch Bingham smokers (wide shield). They are for my neighbors. I have one of the Bingham smokers that I have used six years and it is as good as ever. Send ½ doz. rates.

Respectfully,
6-87 2t AMOS R. GARNER.

☞ Any one who will cut this out and send it to us with 60 cents, will receive the "American Apiculturist" one year; or one of our best warranted queens for 50 cents; or a selected queen for 75 cents; or a tested queen for $1.00; or one copy of the "Beekeepers' Handy Book" by mail for 80 cents.

If the queens are not perfectly satisfactory in every respect, we will return money or send others. No premiums will go with the "Api" where this offer is accepted. Show this to your friends.

This copy of the "Api," unless you are a regular subscriber, will cost just 10 cents in postage stamps. ☜

TO BEEKEEPERS:

We will furnish you with RUBBER STAMPS to mark your section boxes and all your apiarian supplies at the lowest prices. Send for special price list.

S. & S. RUBBER STAMP CO.,
117 Third Street,
6t87–3t. *Hamilton, Ohio.*

FOLDING BOXES.

OUR CARTONS for enclosing SECTION HONEY are the BEST and LOWEST PRICED in the market. Made in one-piece. With or without TAPE Handles. With MICA Fronts or without, in the FLAT or set up. PRINTED or not. Any way to suit. We are bound to satisfy you. We have just put in special Machinery for their manufacture and are prepared to fill orders promptly.

Price per 1000, $ 7.75, printed.
" " 10,000, 60.00, "

Full Price-List Free, Samples 5c.

14 oz. GLASS JARS $5.25 per gross, including CORKS & LABELS. 1 1-2 & 2 gross in a Case. Catalogue of Honey Lables free.

A. O. CRAWFORD,
6–87–6 *S. Weymouth, Mass.*

LIPPINCOTT'S··LIPPINCOTT'S··LIPPINCOTT'S

Leads all other Magazines
In Tales of Fiction — A New Departure
Poems of Interest
Pleasing Short Stories
Interesting Miscellany — 25 cts.
Notes of Progress
NEARLY Choice Selections
200 Original Contributions
PAGES IN EACH ISSUE Topics of the Times
Terse Gems
A Complete New Novel Superlative Merit
By some favorite author in each No.

Giving a library of 12 new and valuable works, worth from $15.00 to $18.00 annually, at the nominal sum of 25 cents per month. Subscription, $3.00 yearly. Stories by John Habberton, Frances Hodgson Burnett, Julian Hawthorne, Lucy C Lillie, etc., etc., will appear in early issues

Circulars, giving details, etc., mailed on application

J. B. LIPPINCOTT COMPANY
715 and 717 Market St., Philadelphia

THE GREATEST WONDER
OF THE AGE

is how J. B. MASON & SONS, Mechanic Falls, Me.,

CAN PUBLISH THE

BEE-KEEPERS' ADVANCE,

a sixteen page Monthly Journal devoted to Modern Beekeeping for only 25 cents per year. We can also sell you

BEES, QUEENS,

and all kinds of Apiarian Supplies as low as the lowest. Send for Illustrated Catalogue and copy of Advance free to

J. B. MASON & SONS,
6–87 1t. *Mechanic Falls, Maine.*

After Forty years' experience in the preparation of more than One Hundred Thousand applications for patents in the United States and Foreign countries, the publishers of the Scientific American continue to act as solicitors for patents, caveats, trade-marks, copyrights, etc., for the United States, and to obtain patents in Canada, England, France, Germany, and all other countries. Their experience is unequaled and their facilities are unsurpassed.

Drawings and specifications prepared and filed in the Patent Office on short notice. Terms very reasonable. No charge for examination of models or drawings. Advice by mail free.

Patents obtained through Munn & Co. are noticed in the **SCIENTIFIC AMERICAN**, which has the largest circulation and is the most influential newspaper of its kind published in the world. The advantages of such a notice every patentee understands.

This large and splendidly illustrated newspaper is published **WEEKLY** at $3.00 a year, and is admitted to be the best paper devoted to science, mechanics, inventions, engineering works, and other departments of industrial progress, published in any country. It contains the names of all patentees and title of every invention patented each week. Try it four months for one dollar. Sold by all newsdealers.

If you have an invention to patent write to Munn & Co., publishers of Scientific American, 361 Broadway, New York

Handbook about patents mailed free.

EXTRAORDINARY EXCHANGE!

Having disposed of my bee-supply bussiness at Des Moines, Iowa, to Jos. Nysewander, I hope my friends and customers will be as generous with him in orders and good will as they have been with me. I am no longer in the supply trade here after March 1, 1887.

J. M. SHUCK.

5-27tf.

LOOK HERE!!

Do you want choice colonies ITALIAN Bees cheap? Full colonies in Carey Improved L. hives, 10¾ × 14 inches, at $8.00 per colony. Also a few colonies in Kidder hives, frames 10¾ and 11¾ inches, at only $7.00 per colony. Those in want of choice colonies of fine Italian bees will do well to send their orders to

W. G. HILLMAN,
5–87–2 *Green River, Vt.*

BARNES' FOOT POWER MACHINERY.

Read what J. I. PARENT, of CHARLTON, N.Y., says—" We cut with one of your Combined Machines, last winter, fifty chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make and we expect to do it with this saw. It will do all you say it will." Catalogue and Price-list Free.

Address, W. F. & JOHN BARNES,
2–87 6 mo. *No. 484 Ruby St., Rockford, Ill.*

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., JULY 1, 1887. No. 7.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt delivery. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass

For the American Apiculturist.

COMB HONEY.

METHOD NUMBER SIX.

R. L. TAYLOR.

PLENTY OF STORES, VIGOROUS QUEENS, SPREADING BROOD, ETC., ETC.

IT is to be presumed that every one who enters upon beekeeping in any of its branches is possessed of bees and of a range that will supply proper pasturage.

The next thing and the most important of all, in order to success in the production of comb honey, is to secure a crowded population in each colony at the opening of the surplus honey season, with colonies populous enough at the right time. Only the grossest neglect can ordinarily prevent the securing of an abundant crop. To attain this condition, attention must be carefully given to the following particulars. First: the bees must have been wintered well. In wintering, let every one pursue the course in which he has had the greatest success; but let him be sure that each colony has not only sufficient good stores, but enough and more than enough. I believe more colonies are destroyed or rendered worthless by starvation or semi-starvation during winter and spring than from any other cause. Second: each colony must have a vigorous queen. A queen is at her best in her second year and there are only exceptional ones that can be profitably kept beyond that age; and I have no doubt it would pay well to remove a large proportion of them at the age of one and a half years. I find in my own experience that the bees themselves supersede queens declining in vigor promptly in exceptional cases only; the apiarist must do the work, or else be content with having a considerable percentage of his colonies worthless, so far as surplus comb honey is concerned.

Third: we must consider spring management. Spring protection is valuable and I have no doubt that "spreading the brood" may sometimes be indulged in profitably; but I do not wish to emphasize these points here, for I would put all the stress possible under this head upon the absolute necessity of having continually an abundance of stores convenient to the brood nest. To secure this is better than to furnish protection: it is protection and much more. It is preferable to the "spreading of brood:" it is a substitute for that and better. President Wilder, when asked to state the three most important things necessary to be done to se-

cure a good crop of strawberries, replied: First, give them plenty of water; secondly, give them more water; thirdly, give them still more water. A bountiful supply of proper stores in the spring has due effect on a colony of bees corresponding to that of an abundance of water on strawberries. Give such a supply of stores and a vigorous queen to a good colony well wintered and there need be no further concern about its getting ready to take advantage of the white clover as soon as it appears. Now have the surplus receptacles in place on the hives as soon as the bees begin to work on the flowers which furnish the surplus, and your reward is sure unless the flowers fail to yield nectar.

The next point that claims attention is the best management during the surplus season. I would advise every one to use the surplus case that pleases him best, for then my advice will be pretty generally followed. I use both those with and those without separators and like both kinds. At present I am inclined to favor the case holding single tier wide frames with separators. A case should never hold but a single tier of sections, and should set square upon the top of the hive with no outside shell or hive to interfere with the rapid handling of the cases. Give the bees additional room as fast as required by tiering up. To a very strong colony give a second case as soon as it gets well started in the first one; let a colony of moderate strength have a second when the first is about half full and allow a weak colony nearly to finish the first before giving another. Always raise the first case and put the second under it (except it may be near the end of the season), and in like manner give a third and fourth case as needed; but, toward the close of the season for surplus, be cautious that you do not give so much room as to have too large a proportion of unfinished sections. Do not be in great haste to remove the honey, though the sections are finished. Never try to take sections one by one from the case on the hive; always wait till you can remove the entire case at once. It will improve the quality of the honey more than it will injure its color to leave it on the hive as long as convenient. I would aim, however, to remove most of the honey just before the close of the season so as to avoid trouble from robber bees. The color of the honey will be but very little affected if the tiering-up plan be pursued.

I clip my queens, and when swarming begins I hive the swarm, (after Heddon,) on the old stand, remove the cases from the old hive to the new and from the old hives whence swarms issue earliest, I would select those containing bees having the most desirable qualities and divide them into nuclei to utilize their cells for the production and fertilization of queens to be used in replacing old and undesirable queens that issue later.

I advocate and practise contracting the brood-chamber to the capacity of about five L frames, and either fill the frames with foundation or use frames with only starters of foundation. For contraction I esteem a hive divided horizontally very much preferable. Such a hive is much handier in every way and is especially desirable because the bees, occupying the whole of the space beneath the section case, work in all parts of it more equally and satisfactorily. I use foundation of full size in the sections. I fasten the foundation, into the sections with a machine invented by my assistant, Mr. Millen. In working it, one foot gives the proper amount of

pressure and on the instant the other foot pushes the section out rubbing in the wax. It is superior to anything I know of.

If these directions have been properly followed, at the end of the season of clover and basswood, if there has been a good flow of nectar, our hives will be found loaded with a heavy crop of comb honey, the choicest possible at that time of the year; but we are now only in the position of the farmer when he enters his meadows with the mowing machine: our crop is still to be cured, only we have this advantage; that we may, if we will, cure our product with certainty and under cover. Our honey is produced to sell, and to sell well it must be palatable. Honey not cured or cured improperly is a poor thing with which to tempt the appetite. Purchasers cannot distinguish the good from the poor at sight, so one purchase of the poor prevents a dozen sales of the good. Poor honey is the bane of our markets. When all honey is thoroughly cured it will all be taken with avidity. It would then be a real luxury and would be irresistible. Purchasers would not be able to get enough. How should honey be cured? Stack it up in the cases as they come from the hive in such a manner that the air can circulate through it freely, in a well built, thoroughly dry, room with a stove in it; do not rely on the heat of the sun to do the work. A fire will be needed only occasionally during the warm weather; but as cold weather approaches, keep the room dry and warm by more frequent fires and in November you will have honey that can be shipped anywhere without breakage or leakage. It will be hard to tear it out of the sections and yet consumers will work eagerly to get it out.

I consider this matter at present the weak point in comb-honey business. However it may be in some other things, in this we help ourselves in helping others. Let there be a move forward in this direction.

Lapeer, Mich.

[The above was not received in time for the June number, so space is made for it in this issue.]

For the American Apiculturist.

WORKING FOR EXTRACTED HONEY.

Willimantic, Conn., Jan. 2, 1887.

EDITOR AMERICAN APICULTURIST:

In your last issue of the "Api" I saw a letter from Mr. G. M. Doolittle who says "when swarming time arrives I simply exchange the brood in the hive from which the swarm issues for empty frames or frames of foundation (generally the former; the plan is known as the Hutchinson plan although it originated with me) while the swarm is in the air and hive them on the returning plan." What I would like to know is, what does Mr. Doolittle do with the parent stock; also what is done with the new swarm?

I am not at all acquainted with what is called the "Hutchinson plan." I have often read of it.

Yours truly,

A. T. TROWBRIDGE.

REPLY BY G. M. DOOLITTLE.

JUST at the present time there seems to be a "craze" among bee-keepers on the subject of comb-honey production, many who have heretofore worked almost exclusively for extracted honey changing their tactics and are now advocating and talking comb honey to the exclusion of that which they formerly endorsed. I fear this is not a wise policy, for it can only result in soon lowering the price of comb honey and advancing the price of extracted, this causing an expensive changing of fixtures the second time. It seems to me that the well-balanced apiarist should produce both comb and

extracted honey, and as he sees the tide swaying toward the side of the one he should go a little heavier in the opposite direction, but not enough as to throw aside all his fixtures along the line the tide is moving. We have many farmers in this locality who when mutton and wool are low sell out their sheep for a song and go into the so-seeming, more profitable business of beef and butter, paying a high price for cows in high tide, for everything in the cattle line. In a few years times change, and cattle are at low tide; beef and butter are sold for a song, while mutton and wool are now bringing a good price again. These farmers now for a second time become discontented and change their cows for sheep, only at a great loss again. So they keep on doing in a sort of will-o'-the-wisp chase losing money at every change. Others keep both sheep and cows, never running out of either, but in time of good prices with the flock raise a little more from the sheep, and these again increase the herd when high prices are paid for the production along that line. In this way a steady growth is maintained, while by the other plan a downward tendency is a sure result.

As I have worked for years for both comb and extracted honey and believing that the present time is favorable to the production of more extracted honey and best comb, perhaps I cannot do better than to tell the readers of the American Apiculturist how I proceed to accomplish what seems to me to be the best results. The first thing necessary in the successful production of extracted honey is a good queen to produce hosts of workers to gather the harvest. In fact, whether all realize it or not, the whole of bee-keeping centres in the queen. Without the queen it would be impossible to produce a pound of extracted honey, hence it becomes apparent that the better the queen is the more honey we obtain. When all come to realize the great value of really good queens we shall have taken a long stride toward successful honey production. But good queens are only of value when we surround them with favorable circumstances, thus getting large numbers of eggs laid at the right time and causing each egg to be nourished to a perfect bee, so that we can have the bees in our colonies by the tens of thousands at the right time. Failing in this, the flowers will bloom in vain as far as filling our surplus combs with honey ready for the extractor, is concerned.

But "what are favorable circumstances" is asked, to which I reply, an abundance of food and warmth. The abundance of food is quite easily secured in this day of bee feeders, and especially so, if the apiarist has set aside the previous season, as he should, combs solid with honey which are ready to be set in the hive at any time. But the warmth is not so easily secured, especially when our honey harvest comes early from white clover which requires the getting of a large quantity of eggs laid early in the season in order to have the bees in time. Several years ago I tried artificial heat to help forward things, but after numerous experiments which resulted only in harm I gave it up.

About this time (1878, I think it was) J. H. Townley, a then noted beekeeper of Michigan, came out with his chaff packing, claiming that there was heat enough generated by an ordinary colony of bees to promote safe, early breeding if said heat was not lost by radiation. He claimed,

if I remember rightly, that this chaff packing answered the same purpose to the bees which bed quilts and coverlids do to a man, in which case if a man is "covered up warm enough," as the expression goes, he would be as warm in a zero temperature as in June. This looked reasonable to me and after that I set my bees when taken from the cellar into chaff hives or rough boxes filled in with chaff, sawdust or cut straw, always contracting the hives with chaff division-boards, quilts, etc., to suit the size of the colony. In this way colonies of bees would go right on breeding through cold days and nights, keeping warm and nice till the combs would be full of brood down at the bottom corners, while those not protected would be clustered closely to keep warm with very little brood. I here give credit to Mr. Townley for this plan and think all using it should be willing to do the same.

As soon as all the combs are filled with brood which were first given them more are added till the hive is full of comb and brood. In adding these combs, I prefer to add two at a time, using one which is empty and one filled with honey such as spoken of above. The empty one is placed at the outside and the full one in the centre. Before putting in the full one I break the cappings of the cells by passing a knife over it flatwise, for by this means the bees are obliged to remove the honey, and in doing so are stimulated to apparently greater activity than by any plan of feeding with which I am acquainted. As the honey is removed over to the outside empty comb, the queen fills the emptied comb with eggs which when hatched into larva require the honey brought back by the nurse bees to feed said larva, and as the honey is now being carried again, activity is still kept up and the queen now goes over and fills this comb with eggs also. In this way one hive is soon filled with eggs, brood and bees just in time for the harvest.

Having the hive filled as spoken of, and the honey harvest at hand or just commenced, if we wish no increase from our bees, no time is to be lost in putting on the surplus arrangement, otherwise the bees becoming crowded may get the swarming fever. For extracting, I prefer another hive of the size of the first, but some prefer one of only one-half the depth. As to results there is probably no great difference, but I consider it quite an object to have all hives and frames alike in the apiary. In putting on this surplus arrangement I prefer to use empty combs, if possible, instead of comb foundation. I also prefer to use two large or wide dummies, one at each side, for a few days, so that one-half of the room is taken up which leads the bees along gradually instead of thrusting a large amount of surplus room upon them at once. From experience I believe them less liable to swarm where this course is taken, for they seem to bend every energy to fill this small, additional room, while, where a large amount is given at once, they are injured should it become cool; or, if warm, they swarm from being loath to enter it. As soon as the half of the hive given them is partly filled with honey, the dummies are taken out, the combs spread apart and frames filled with foundation put between them. At this stage I would just as soon have foundation as empty comb, for the bees are now ready to work upon it, while before they were not. The time for taking out the dummies is when you see the cells being lengthened out with new comb along the tops of the combs.

How you will proceed in the future depends upon whether you wish your honey all ripened in the hive till the harvest is over, or ripened in a warm room by evaporation. Sometimes I think that honey left on the hive through the season is of a better quality than that extracted every week or so; then again I am not so sure about it. Of one thing I am certain, more honey can be secured with less hives and fixtures where it is extracted when the bees first begin to seal it, than can be gotten by the other method.

As to the labor there is little difference, except that when we extract often the labor comes at a time of year when we are the most crowded. To be sure the operation is gone through with oftener, but to offset this there is little or no uncapping to be done, while the honey leaves the comb more clean with less than one-half the labor in turning the extractor. If the season is warm and dry, I would just as soon have honey extracted as above as that left on the hive the season through, but if cool and damp I prefer it ripened all that is possible by the bees, and even then it is not as good as the other. In my opinion the season has more to do with the quality of the honey than the process of ripening. If we decide to extract oftener, the hive we have already added (if both contain two thousand or more cubic inches) is probably all the room the bees will need, but if left on during the season, one more and probably two will be needed. In putting on the third story I do not use the dummies, for by this time the weather has got so warm and the bees so numerous that they will spread out so as to occupy the whole of the extra hive. This hive should be put on when the bees have the combs in the second story sealed along the tops of the frames, or soon after you would commence extracting if working the other way. Many say raise up the second story and place this third hive between the two; but after repeated trials of both I prefer placing it on top, for I think the bees will occupy it just as quickly if the honey flow continues, while if it from any cause should be cut off at this time or soon after, we are in much better shape in not having the honey scattered through the three hives with few if any combs full. If a fourth story is needed, put on the same as the third, when after the season is over you will begin to carry the honey to the honey house and extract.

To get the honey off I find it is the best way to go to a hive and blow a perfect deluge of smoke down on the bees from the top of the combs, and as soon as the bees have run below take off that story and set it on your wheelbarrow or honey cart, not attempting to get more than one story from one hive at the same time; for, if we do, the bees will return to the next story before you can get it off, when smoke is of little use to drive them. Before extracting save plenty of good, full combs for wintering and spring feeding. If the weather is cool, when you wish to extract, place the combs of honey in a small room for three or four hours previous, in which the temperature is kept as warm as 100°, when you can take them out as you wish to uncap and extract them, doing this work as easily as on a hot day in July or August.

In the above I have given a brief outline of how I work for extracted honey, and as a proof that it is an average plan at least, will say that I have taken as high as 566 pounds of honey from a single colony in one season.

In conclusion I will say that

the getting of multitudes of bees, just at the right time, has more to do with the successful working for honey than anything else, and when all realize this and work for the same to the fullest extent, one-half of the colonies will gather as much surplus as the whole do under one present management.

Borodino, N. Y.

For the American Apiculturist.

NUMBER SIX OF THIS YEAR.

J. M. Shuck.

The June, 1887, "Apiculturist" is worth a great deal to the practical producer of honey. If 50,000 intelligent beekeepers would read this number the honey crop of the United States, the season being favorable, would be twenty-five per cent larger by the reading and consequent practice than it would without it.

The series of articles starts out with Doolittle (what a misnomer! it ought to be Do(o)much) at the head. Some men are born to lead. If you would put Doolittle with his burly form, his accurate, never failing mental vision far in the background, the natural sweet fermentation and agitation of human thought would work and push him to the fore. The writings of Doolittle are simply monumental as to the vastness of their truths and the lilliputs of their errors. What a volume they would make and how well they could be relied upon by those who desire to learn and never unlearn.

Then follows Doctor Tinker who makes the nicest sections in the world and who prides himself on his nice, accurate-working machinery, "if he don't make a cent." If rightly informed, the doctor is not such a noted producer of honey as some, but if his experiments in the production of honey are conducted upon the same careful, painstaking basis, as are those he employs in the manufacture of hives, sections, etc., his conclusions must be valuable. One item of interest in the doctor's article will attract attention and that is, that "inverting the brood-nest has come to stay." The doctor has not always believed this. We are thankful to the doctor for this; it is always a pleasure to see a good man also right, and aside from the doctor's article in question he is right in another thing: he *hates* "cheap John" goods in our line as the devil hates holy water. He doesn't make anything merely to sell, he makes things to be used, so that he who buys gets the worth of his money.

Next in the list comes A. E. Manum. It is a nine days' wonder how this beekeeper was gotten into the public view. He has been so busy for *years* taking honey, "dead loads of it," that no one supposed he could be induced to tell about it. He still sticks to separators, clips his queens' wings and jumps his rows of sections to insure even work in the cases and uniform color as to the combs. Mr. Manum gives much of the detail of his practice, but the article is so cut off here and there and elsewhere, that it shows in the plainest manner possible that he has not begun to tell what he knows about getting comb honey. Everybody should read Mr. Manum's article.

Next comes Dr. Miller who apparently looks over the field, takes in a long breath and says, "I have just told all about this thing in a book and what more

shall I say now?" so he goes on in a pleasant way and works a large number of very useful hints into a short article. The doctor's chatty style is agreeable and works instruction in a charming way. He has probably been a teacher in his younger days; he is, to say the least, one now.

Next comes Brother Demaree from Kentucky, the only representative in this series from the "Sunny South." It is noticed that he makes a point on *locality*, as affecting different operations in the production of honey. This word is more and more used in our literature from day to day, and it may be remarked that we can never have a manual of general instruction in beekeeping and honey-getting until we get the results from experiments conducted at two or three apicultural stations in each state and territory in our Union. Many of the disappointments in beekeeping arise from the attempt to make a plan which succeeds in Maine apply in California or somewhere else, when the conditions surrounding the two cases may not at all be similar. Mr. Demaree is a veteran of about forty years in beekeeping, and his work has probably been largely devoted to investigation and experiment, and his suggestions are entitled to great respect.

Taken all in all, these five articles are a remarkable collection to find in one single number of any bee paper, and they ought to go far to the establishment of the "Apiculturist" upon a permanent basis, if it has not already attained the desired goal.

Des Moines, Ia., May 31, 1887.

For the American Apiculturist.

MANIPULATION OF BEES, ETC.

G. W. Demaree.

The beginner must learn to handle his bees, so as to learn practically the natural history and habits of bees and to learn to know just what goes on inside of the hive, after which a practised eye will tell at a glance when anything is wrong with a colony from external "signs." After the deep snow we had the latter part of March (which by reason of its depth lay for several days), when the weather cleared up and the bees were able to stir, I discovered by walking through the apiary about ten colonies, one of the best in the apiary among them that had "balled" and killed their queens during the bad spell of weather.

They do not often go so far in their desperation as this, but they did it for me this time. Part of these colonies were saved by making them rear queens and helping them with some capped brood. They will not be in time to do much this season. I have found that it pays to give bees plenty of stores in the fall, so that they need not be disturbed in the early spring till fruit bloom comes, after which there is no danger in handling bees. Last season (1886) in March, after going through my bees to give them a "looking over" and providing for those colonies that might need assistance, I had occasion to return to one colony that had been examined, and when I opened the hive I found the queen "balled." I performed whatever I had reopened the hive for, smoked the bees off of the queen, closed the hive and went my way, but that hive turned up queenless afterwards. I now make it a rule that when I find a

"laying queen balled" I cage her till the bees give up their evil intentions on her life. By these proceedings I have found to my satisfaction that the fault of "balling" is most generally "pure cursedness" on the part of the worker bees.

By close observation in connection with this curious and serious freak of bees destroying their queens in the early spring, I find the main cause to be discouragement. I rarely ever see it occur if the colonies are fairly populous and have plenty of stores, hence the remedy is to provide the bees with an abundance of stores if you must keep less of them.

I have found that the advice of the standard books on bee culture are misleading when they advise building up weak colonies by drawing brood from the stronger ones. It pays me best to depend on the strong colonies for surplus, and leave the weak colonies to build up themselves if they get no surplus at all.

Well, what I wanted to say most in this connection is, after one has learned the internal working of the bee hive and gained sufficient knowledge of external appearances, it is a waste of time and labor to open hives often. The hives should be so arranged as to be susceptible of manipulation without going into the brood department except when absolutely necessary. In an apiary located in a public place like my own, where many persons visit it as sight-seers, it pays me to keep a hive or two, in proper condition for rapid and easy manipulation, that the queen can be exhibited readily, the brood and drones, workers pointed out, etc. One or two hives can be made to pay in this way in a large apiary. I use them to draw brood from, using the purest stock in the apiary for the purpose, as we like to "show" our best stock, and such bees make the best of nuclei and work well anywhere.

The swarming season is late here this spring; I had but one swarm in May. The weather has been too fitful for swarming up to this date (June 4). I have found a shorter way to prevent after swarms than the plans I have heretofore practised. Instead of delaying as heretofore, I now succeed by moving the hive from which the swarm issues immediately to a new location, and this saves time and "fuss." When a swarm issues, an empty hive is set by the side of the "old hive," and the combs are all lifted out and the few bees that are left are shaken off into the "old hive" and are placed in the new hive. If I have young queens one is run into the new hive, after destroying all queen cells; if not, one good cell is left and the balance destroyed. The now empty "old hive" is filled with empty combs or frames filled with foundation. A queen excluder is put on, and on this is placed plenty of surplus room including the case or cases that were on the hive when the swarm issued. The new hive, with its contents, is now moved to a new location in the apiary, and the swarm is hived in the "old hive" on the old stand. Not one time in a dozen will a second swarm issue under this management, and "never a one" if a young queen is given immediately.

Hiving swarms in hives that have just cast prime swarms, as suggested by brother Alley, "is not new." Several persons have spoken of the plan heretofore, and I have tried it without satisfactory result. In our great swarming season (1883) I tried it on a large scale, and it did not work satisfactorily. It seems to place the bees in *too* much the same conditions

from which they had swarmed to escape. Some swarms, if the queens were old, would start queen cells and swarm again in five or six days. Others would "sulk" and do but little good, while a few would light out for the woods in high disgust; others would do very well. I hope the plan will be tested, thoroughly tested under the experienced eye of brother Alley, and we shall be favored with a report.

Christiansburg, Ky.

For the American Apiculturist.

BLACK BEES FROM PURE ITALIANS.

A. L. SWINSON.

In the API, page 115, Mr. Pond, (J. E.) takes Dr. Tinker to task for asserting that black bees may be produced of pure Italians by selective breeding for that particular object, and calls on the Editor of the "API" to sustain the fact that they have reason to believe that no such demonstration can be made, as they both had directly the contrary experience. Mr. Alley did not sustain Mr. Pond's assertion, at least did not do so in connection with the aforesaid article.

In reply to Mr. Pond, I desire to say I think Dr. Tinker is perfectly correct, and my opinion is based on practical experiments all made since 1884. I think this is so with any race of bees and I have imported direct, and bred myself, the Cyprian and Syrian. I find the same rule applicable to them. On the other hand, I can take any strain of black bees and breed them up to three-banded workers. I have had two Carniolans, imported, from Benton; then I have had plenty of Germans to observe.

The queen of any race of yellow banded bees, that will produce any dark-colored QUEEN progeny, can be run into black bees, by selective breeding, and I have never found a SINGLE QUEEN of any race clear of that fault. I advanced these deductions to Dr. Tinker in the fall of 1886, and also another, that I could breed workers that were clear of all dark rings around their abdomens; leaving the color of the abdomen yellow, of various shades; and the usual rings of fuzz alone, to make up the marking of the abdomen of the workers.

Dr. Tinker replied that so far as running the yellow races into blacks, he could, or had had the same experience as myself. That in the breeding out of the black rings of bees around the abdomen of the workers, he had never thought of and could not say. Since advancing the said theory, I have practically demonstrated that it is a certain fact that it can be done. And I have done it. Now, if Mr. Pond wants to pay for workers that show no black rings around their abdomens, I will send him some and go over and select every one I can find in my apiaries. I say *my*, for I don't think any one else has such workers in America. All that is needed in this case is to show the bees. In the other case, when black bees would be produced, Mr. Pond could easily say they were not kept out of reach of black bees, and it could not be proved in hardly a single instance or case that they were.

Goldsboro, N. C.

For the American Apiculturist.

CARE NEEDED.

PROF. GEO. G. GROFF.

In the June number of the AMERICAN APICULTURIST, Mr. Corneil

complains of losses which he has sustained from following unreliable advice. Beekeepers, it would seem, are often so enthusiastic of the success of new ideas, that they publish for facts, what are only *untested theories*. We see this in the hundreds of inventions about hives and in the management of bees. The bee papers are full of untested theories, all laid down, as though proven. The losses resulting from attempts to carry out these theories must, in the aggregate, be very great. But those prone to experiment with every new idea, should remember the injunction: "Prove all things, hold fast to that which is good." Let the experiments be first tried on a small scale and later we may embark our all in them.

In a recent number of the "New York Tribune," a noted beekeeper and college professor tells how to destroy moths which may be in empty combs. If followed out, his directions are very excellent for burning down the house, if performed in-doors. They are, in short: put the combs in a box in which are live coals, on which sprinkle some sulphur. The fumes will do the work, also the flame melt and set fire to the wax and the house. A friend of mine had just such an experience this spring. I told her to dig a hole in the ground, put some coals in it, sprinkle sulphur on them, and set the hive over the hole. But to improve on my plan, she put the coals and sulphur on a flat vessel on a brick floor in the wash kitchen, and set the hive over them. The result was a narrow escape of the house.

Lewisburg, Pa.

For the American Apiculturist.

A DULL DAY IN MAY.

WEEDS.

MRS. H. HILLS.

I HAVE often wondered how one would get through with the dull, dark days which sometimes come in this month, were it not for the weeds. One, finally, becomes tired of remaining in doors and putting up sections, even the white, delicate, pearl-like things, sent by Doctor Tinker.

We wander out and take a look at the bees, but they seem to partake of the universal dullness. Now and then one, more alert than the rest, starts out on a lonesome journey, and another comes quietly home, looking, as though after all, it were hardly worth the trouble. A few are dozing at the entrances, while now and then one comes slowly out and takes a view of the prospect, then deliberately turns back and disappears again from sight.

We ramble off, under the dull, gray sky, to where the lettuce, young onions and cabbages are congregated. We have not been here for several days, but the weeds have. Are weeds matter out of place? Some of them must feel that they somehow placed themselves in a wrong position, if they judge from the manner in which they are immediately and effectually rooted out. We are well acquainted with them all; and as we saunter on, by the palings and hedge-rows, many, which were formerly doomed to early death, are now spared. Dandelion, catnip, motherwort, mustard, jill-over-the-ground and others, so long as they do not intrude on the garden beds, are not molested. Now and then, we see a solitary bee taking his lonely dinner. On other days,

many bees visit here, and the air will be filled with their drowsy droning.

Each weed possesses its own individuality, and all soon become sentient objects to us. When we first made their acquaintance, they had become, through long and undisturbed occupation of the land, quite lords of the domain. The docks and the horseradish were rival feudal lords, occupying by right of conquest and granting what seemed meet of the common territory to lesser vassal weeds. If one of these two powerful rivals occupied more ground than the other, it was made up for by the remarkable tenacity with which the other held possession when once it had gained foothold and on account of its very unnatural and illegal methods of propagating itself.

These monarchs of the field hardly condescended to notice the insignificant efforts of one small pair of hands, attempting to disturb the foundation of their ancient rights. As hopefully might the mouse attempt to remove the mountain; but monopolies shall not always prosper. The burdocks waxed high for many seasons and annually presented their wonderful crop of bright burrs. Sometimes it seemed wicked to further attempt their demolition. The thought of other and long past dull days in childhood which had been made tolerable by these and kindred blossoms, together with a feeling of utter incapacity to cope with their remarkable growth, often discouraged from further effort. Yet, as time passed, they gradually took on a less haughty demeanor, until, finally, one began to feel a sort of pity for the baby plants which were ruthlessly cut off, and the parent plants, doomed by their nature to an early death, seemed to foresee, in the loss of these little ones, the decay of their ancient grandeur.

The day at last came when no one individual of the species could be found in all our borders. All their strength and pride had not been sufficient to withstand the inroads which were so constantly kept up by the one small pair of hands. They have taken refuge in a neighboring, unoccupied lot, from which they attempt, by all manner of devices, known only to themselves, to regain a foothold in their ancient realm. But the warfare is now insignificant and affords a pretext, on these dull days, for many a lazy, dreamy saunter, among the tangles of fences and hedge-rows.

Sheboygan Falls, Wis.

THE HONEY MARKET IN THE WEST.

G. C. Stewart.

I have sold comb honey in a town in northwestern Missouri for four years from 20 cents at first to 15 cents last year. The last sale I made there was at 13 cents, because honey had been shipped in and sold at 13 cents as California honey; but I know by the style of package it was from Iowa or Missouri but it was sold by a commission man. I know I could have obtained 15 cents for the same, and not call it by a wrong name either. Bee men, you are to blame for the low price of honey. The commission man will sell quickly if he sells for $\frac{2}{3}$ the value. Why not sell to the retailer direct? My plan is to go to the bank and get the name of the reliable dealers in good towns, from Bradstreet, then write a postal and state the quantity, quality, and price delivered in good order, guar-

antee safe arrival by freight, and trust the party for a short time for pay. I have sold to parties I have never heard of any other way. A safer way would be to have the cash, but do not think much would be sold so, for a busy dealer would not take time to find out your standing. Extracted honey I sell at home if possible. I will peddle all my honey before sending to commission men. They may do the best way they can but we are the losers. The season is discouraging; bees are light and clover dying from drought. Have hopes of a good linden flow for the trees are full of buds. The API is a fine paper. The June number is worth $5 to a practical bee owner.

Mr. W. F. Clark.—"The hive you want" would be a chaff-hive, with movable upper story, and movable bottom, I think.

Hopkins, Mo.

For the American Apiculturist.

LETTER FROM TEXAS.

MRS. SALLIE E. SHERMAN.

GLOOMY BUT BETTER PROSPECTS FOR BEEKEEPERS IN TEXAS.

The prospect for a good yield of honey in this part of Texas is indeed gloomy; though I am happy to say that our terrible drought has come to an end. We had on the 2nd inst. a glorious rain and I am in hopes that our bees will be able to gather a living. Hoarhound is in bloom now. Our only hope of surplus, if we get any, will be from fall flowers. I am just in receipt of a letter from a beekeeping friend in an adjoining county asking me if I think it would pay him to move his bees (about thirty colonies) twenty-five miles to good pasturage. I think it would, but would prefer Mr. Alley's answer to my own judgment. The drought has cut off all prospect for any surplus with him as well as myself. He has quite a lot of little ones dependent upon him for sustenance. Quite a number of persons in and about town that owned only a few colonies of bees have lost all and would now be glad to sell their empty hives for a mere pittance, and let beekeeping severely alone hereafter. Those who have never passed through such a severe drought as we have just had cannot imagine how bad, how terribly distressing, it was. Water hauling was about all that could be done. It looked like starvation staring us in the face, look which way we would. Merchants refused to credit, turned off their clerks, reshipped their goods that had been ordered and in many cases closed their doors. Stock was in danger of starvation. Horses that were worth $100.00 could not be sold for $25.00. There was no demand for cattle that had heretofore been cash in the spring. Everything in the provision line went up. Negro women were trying to hire themselves out for their food and in many instances failed. With all these discouraging things to contend with and witness, how could I write for the dear "API?" But all is changed now. We have had a good rain which made more glad hearts in Bell Co., I dare say, than ever was at one time before. Everybody you see now wears a broad smile and looks happy and all are as busy as bees.

Salado, Texas, May 5, 1887.

[I advise moving bees if by so doing, a good pasturage can be had. It is not an unusual thing for beekeepers at the north to move bees. Mr. L. C. Root, a few years ago, moved several hundred colonies a few miles, and in about two weeks he was well paid for the trouble, as by moving the bees to a new location, several tons of surplus honey were secured.

We are glad to learn that the terrible drought which has prevailed so long in Texas has been broken at last.]

For the American Apiculturist.

THE WINTER PROBLEM.

J. E. POND.

An article upon the above subject may not be considered exactly seasonable, still it is one of the greatest importance, and one to which too much thought cannot be given, and of which none too much can be written. In this article I propose to deal solely with the question as it relates to New England and its climate, but believe that whatever is applicable to a New England winter will apply equally well to any changeable climate; and I say as a matter of fact that I have solved the problem to my own satisfaction at least, and that satisfaction is owing to the fact, that during the last sixteen years, wintering on summer stands with the temperature showing from 40° *F.* above, to 20° *F.* below 0, and with from 130 to 175 days when bees could hardly fly, I have not lost a single colony that had stores enough on which to live, during the period above stated. And, further, that during that time, only two colonies were lost, and those could have been saved had not illness confined me to the house from February to June, preventing me from caring for my apiary as I should. During the whole time I have kept bees, I have experimented largely in this matter, and in the course of those experiments have used hives of all kinds, shapes, and sizes, and have found that while there is a great difference in hives in the matter of economy, there is but little in the mere matter of safe wintering. For reasons that I need not explain here, I will say incidentally, that the ten frame "L" hive is the one I prefer to all others, and is the one I recommend for that reason. I have experimented with single and double-walled hives, with chaff filling, and dead air spaces, with sides 1¼ inch to ⅝ inch thick, and I find no trouble in wintering in any of them. I do find, however, that a double-walled hive, with walls from ⅝ to ¾ inch thick, and with a dead air space of 1 to 1¼ inch, gives the best results, in the matter of economy in use of winter stores; but, even in this matter, I have not found that degree of regularity, that one would suppose should exist. The smallest amount of stores consumed in my own apiary was in the winter of 1885–86, and in a single walled ¾ inch ten frame "L" hive," the bees having free access to all the frames; the amount consumed from October 15, 1885, to Feb. 20, 1886, being 11½ lbs. and the colony came through in the best of condition, and gathered 72 lbs. of honey from apple blossoms in four days in the following May. I don't consider that there is any particular quality either in myself or in my bees, that should produce the results stated above; but I do believe that these results were brought about by the careful method of management I have adopted, and which is the same that I have made public many times during the last few years, and will be found in the "Api," with those of several others. I am forced to the conclusion that, while perhaps a little honey can be saved by "cellar wintering," take it all in all, the safest place is the summer stands; that is to say, bees will "spring" better when kept on summer stands, than when wintered inside, and as a rule will live till spring no matter how packed for winter, if they have stores where they can reach them. I am convinced, too, that chaff-hives afford no better real protection than do single walls, and that in spring they are far less safe; and then

again I am of the opinion that in many cases, chaff hives have proved an injury, for the reason that dependence has been placed on them alone, and such care as is an actual necessity has not been given for that reason. We can all remember the warm discussions that have been held in regard to the wintering qualities of deep and shallow frames, and I suppose some of the readers of the "Api" can remember the assaults that have been made upon myself because I insisted that the "L" frame was amply deep enough. Now I presume that many will differ from me in the matter of chaff protection; to all such I can only say, "I speak whereof I know." It is not guess-work nor theory; it is a matter of careful experiments and thorough tests, and I claim and make the claim boldly that, with proper preparation in the fall, better results will come in the way of early brood, and early honey-gathering, by the use of double-wall dead air space hives with sides $\frac{5}{8}$ to $\frac{3}{4}$ inch thick, than with the most approved chaff-hives ever made. The first double-walled hive I ever used was made by our Editor, and of $\frac{3}{4}$ inch stock, with an inch dead air space. This hive I have used some sixteen years; a colony has been wintered in it every winter during that time, and not only safely, but so well, that I have always found from three to five frames well filled with brood by the first of March each year.

I have not written the above in the interest of any dealer, or of any hive; but have stated these facts for the information of such readers of the "Api" as may possibly be desirous of learning the truth, and are in doubt from what they have read, whether to use single walls, or to go to the expense of procuring chaff-hives as a matter of precaution.

I could theorize upon the matter of natural law as applied to bee life, and show argumentatively why the results stated above will always follow if the same general plan is adopted; and also show in the same way, why single-walls even are better than chaff-hives. But the facts are what is wanted by the practical man; and he can theorize to suit himself. It may be asked what experience I have had. To that I will say, I have kept bees and carefully studied their habits, etc., since 1864, and during that time have kept from five to fifty colonies; that, in the course of my study and experiment, I have never hesitated to sacrifice one or a dozen colonies, if necessary, to disprove or prove and establish a a given point. Many hive dealers make the claim that only with their hive can successful wintering be fully assured. My claim is that except in an extraordinary winter bees can be kept as safely as can horses and cattle, and that too on their summer stands and in single-walled hives. I claim also, that there is no safer winter stores for bees than their own natural food, if the same be pure; that cold does not of itself kill our bees; that they will safely resist exposure of great severity and of long continuation, that the main point of protection is to prevent exposure to sudden changes in temperature, and that this can be better and more cheaply done by other means than by increasing the thickness of the walls of their habitations.

I shall be pleased to have my views discussed, and if any one can make a better practical showing than I have been able to do, I shall be pleased to learn how it is done. My position needs no argument in its support. I give the facts for what they are worth. This bridge has carried me safely all these years, and will prove equally

as safe for any and all who travel over it in the same way as I do myself. If any wish to know my plans and methods they will find them generally stated in the "Api," and I shall be happy to give further information to all who apply personally or by letter.

Foxboro, Mass., June, 1887.

QUERIES.

Answers by Practical Apiarists.

BEST TIME TO INTRODUCE QUEENS.

Query No. 26. When is the best time to change or supersede old queens?

NOVICE.

ANSWER BY G. W. DEMAREE.

I prefer to change queens just at the close of the white clover harvest.

ANSWER BY DR. TINKER.

I let the bees supersede all old queens. All good queens usually remain prolific and valuable to the last.

ANSWER BY DR. C. C. MILLER.

Perhaps at or near the close of the honey harvest. Possibly, it is best to leave such matters in charge of the bees.

ANSWER BY R. L. TAYLOR.

During the swarming season and not much earlier than four weeks before the close of the white clover and basswood seasons.

ANSWER BY JAMES HEDDON.

As soon as you feel the need of such re-queening, during the months of May, June, July and August, when good queens can be produced in this latitude.

ANSWER BY H. ALLEY.

At any time when queens can be procured. I would not disturb a colony at work in the sections for the purpose of changing queens. Introduce queens at any other time when desirable.

ANSWER BY WILL. M. KELLOGG.

When there is a good honey flow, when you can leave dripping honey exposed in the apiary and bees will not take it up, queens then can be introduced by almost any method, so they know they are queenless.

ANSWER BY P. R. RUSSELL.

Well, that depends. Generally speaking, the best time is as soon as we can get ready (when the season is suitable) and young queens are to be had. Queens are more safely introduced during the honey harvest and at night fall. I am seldom obliged to supersede old queens, especially Italians, as the bees attend to that matter themselves and too often supersede them when it seems uncalled for. I have changed queens frequently while a natural swarm was being hived and always with success.

ANSWER BY J. E. POND.

I do not consider it advisable or necessary to re-queen a colony or supersede a queen, so long as the old queen is doing her duty satisfactorily, unless it be desirable to do so for the purpose of changing from one race to another; in such case it may be done at any time under proper precautions, but the novice will find it safer to make the exchange when honey is being gathered freely.

I had a queen last year in her fifth year, procured from our editor, that was to all appearances as good as ever last fall, both in strength and prolificness. She was a very light yellow Italian, *not Albino*.

QUEENS MATING.

Query No. 27. At what age do young queens usually become fertile? and after having met the drone, when do they commence to lay? QUERIST.

ANSWERS BY JAMES HEDDON.

1. From five to fifteen days.
2. From two to three days.

ANSWER BY WILL. M. KELLOGG.

Usually from five days to two weeks old, and they begin to lay within three or four days.

ANSWER BY R. L. TAYLOR.

Young queens usually become fertile when about a week old and begin to lay in about two days thereafter.

ANSWER BY DR. G. L. TINKER.

At from eight to twelve days old usually, but if the weather is too cold, as in early spring or in the fall, they often do not mate for twenty days. After meeting the drone they mostly begin to lay on the third day.

ANSWER BY DR. C. C. MILLER.

My observation does not cover the whole of this question, as I have only noticed that I find young queens laying at ten or twelve days old. The other part of the question is answered in "Alley's Handy Book" and other text books.

ANSWER BY P. R. RUSSELL.

Naturally, queens become fertile when six to eight days old and about four days thereafter will begin to lay. This is a season of peculiar peril to the young queen and colony from extraneous causes, and I have often discovered the loss of a queen by the agitated manner of the bees about the entrance at night.

ANSWERS BY J. E. POND.

1. Queens emerge from their cells about the sixteenth day from the egg, depending upon the strength of the colony and state of the weather, as to heat and cold. They usually take their wedding flight from five to ten days thereafter, though in one instance, coming under my own observation, the queen did not meet a drone till the twenty-eighth day after she left her cell.

2. They usually begin laying in a day or two (but sometimes longer) after they have successfully mated.

ANSWER BY G. W. DEMAREE.

In my locality young queens usually mate at seven or eight days old and begin to lay at ten days old. There is really no fixed rule, however. The ordinary limit of time for them to begin to lay eggs is from nine to fourteen days old. They generally lay eggs in three days after they mate, but not always. I have had young queens to lay eggs in two days after mating, and I have had them to mate late in the fall and lay no eggs till the February following, over three months after mating.

ANSWERS BY H. ALLEY.

1. Young queens will certainly take a flight for the purpose of mating during the honey-gathering season, when they are five days old, provided the weather is suitable. After the honey harvest, they will be from ten to fifteen days about it, unless the bees are treated according to directions given in my work on "Queen-rearing." Although I have reared over 60,000 queens during the past twenty-eight years, I never knew a queen to make the mating flight until she was five days old, and I think I have watched the process as closely as any one.

2. If she is a good queen, eggs will usually be found in the cells on the second morning after fertilization.

The American Apiculturist.

Published Monthly.

HENRY ALLEY,
MANAGER,
WENHAM, MASS.

TERMS: $1.00 PER YEAR.

SEE INDUCEMENTS TO SUBSCRIBERS.

Wenham, Mass, July 1, 1887.

THE MANAGER'S CORNER.

W. Z. Hutchinson's Book has lain on our table some time, but owing to pressure of spring work in our apiary, to which we have to attend, we have not been able to review it sooner. We have read the very flattering reviews of this work, and are sorry to say we cannot quite agree with them. We intend to express our views fully and freely on bee matters and shall endeavor at all times to do exact justice, and in the present instance shall live up to that rule.

The mechanical and typographical part of the book is good, the cover quite unique, and the style excellent. The price, twenty-five cents, seems to us rather high for the small amount of matter it contains; and when we recognize the fact that it is largely a compilation, or in other words, an expression merely of the best thoughts of our best writers, it strikes us that the general public will be inclined to think they are paying dear for what they have already read in the bee journals. From the reviews we have read we supposed we should find something original at least; but when on reading we found the ground travelled over was the same that Townley, Doolittle and others had worked over and over again during past years, we could only say to ourselves, how easy it is to write a book if one has an encyclopœdia to fall back upon; and then again, we must say we don't like to see any book, not intended as an advertisement, start out as does this, with a clean-cut certificate in favor of some hive. Advertisements are all right in their proper places, but Mr. H. has in our judgment overstepped the bounds of propriety in this respect.

We wish it distinctly understood that we consider the ideas contained in the book to be valuable; and were they original with Mr. H. we should have no fault to find, other than with the price. Mr. H. as a writer generally is terse and vigorous, and many of his articles are of value to beekeepers. We hope all our readers will read the book, as it will prove to them when they find nothing that has not already been told in our journal, that the "API" still leads, as we shall always endeavor to make it.

Close Attention should now be given the bees. Do not relax in the least till you have secured every ounce of comb honey it is possible to secure. When one set of sections is a little over half filled raise them up and place another set under these. When the first set is nearly capped over remove it to a colony too weak to work in the sections and let them finish it and at the same time place another new set of sections on the hive from which the full set were taken. If dull weather sets in for a few days, feed the bees with thin syrup made of sugar and honey; this will have a tendency to keep the bees from deserting the sections.

A Curious Fact.—One of the queer things about wintering bees last winter is the fact that colonies that were weak in the fall came through in splendid condition, while the strongest colonies in many apiaries died. Now, here is a chance for Mr. Heddon, Professor Cook, J. E. Pond and some others to give us their ideas as to this very singular condition of things. It looks to me as though these eminent apiarists have a problem that will for a long time puzzle them. Take right hold of it, brothers.

Preserving Empty Combs.—Empty combs may be kept in good condition by placing them in a *dry*, cool cellar. If possible, arrange it so that there will be a free draught of air through the cellar at all times. The temperature will be kept so low that the moth eggs will not hatch, and the ventilation, as above advised, will prevent the combs from moulding.

More Ventilation is certainly needed when bees "lay out." This may be supplied by placing more sections on the hive, enlarging the entrance; or by raising the body of the hive an inch at the front from the bottom board.

Many beekeepers suppose their bees are intending to swarm when they cluster outside the hive. Well, that is an indication, but it is a stronger indication that the bees need more air or more storage room for honey.

Queens when they have had a chance to lay to their full capacity for two seasons will be worthless for a third year. There are exceptions to this rule, but not one queen in fifty is of much value at three years of age. Therefore, all queens should be considered old when they have been in the hive two years.

Combs Melting Down.—One of the results of improper ventilation is the melting down of the combs in the brood-nest; when this occurs the bees should be attended to at once.

Remove all the bees from the combs and hive, to a new hive and fix up things as quickly as possible. By so doing, the damage may soon be repaired; but left alone the colony will be ruined.

When the combs break down, the bees will rush out and cover the outside of the hive; many of them will be daubed with honey. If the hive contained much honey it will run out at the entrance.

Encouraging.—We are in daily receipt of most encouraging letters from the friends of the API. Words of praise of the fine and timely articles in the June number come in from all quarters. Subscriptions, too, are coming in rapidly, as about every beekeeper who sees a specimen copy of the API at once sends for our journal and one of the drone and queen-traps or fine queens, all of which we offer at such low prices.

Bear in mind we give each subscriber one of our improved drone and queen-traps, free by mail, or send them a select queen for 50 cents in addition to the $1.00 for a yearly subscription to the APICULTURIST.

Returning Swarms.—Do not fail to test the method for returning swarms as given in the June issue of the API, and do not forget to send us a report of your success or failure whichever it may be. I am pretty sure it will be successful in most cases.

If Queen-rearing is going on while forage is scarce, the bees should be fed liberally each day until the cells are capped with syrup made of three parts sugar and honey and two parts water. Rear your queens according to directions given in the "Beekeepers' Handy Book" and you will certainly succeed. I defy any person in the world to rear queens by any other method that will insure a certain number of cells to each colony or to rear such fine queens as can be reared by the methods given in the "Handy Book." I also challenge any beekeeper in the world to advance a more perfect system of queen-rearing, or practising one by which as perfect and hardy queens can be reared.

By practising the methods given in the "Handy Book" *better* queens can be reared provided the bees are supplied with not over fifteen eggs, *not larva*, to each large colony. I can give this number of eggs to a colony and am just as sure of fifteen fine queens as I am of one; and every time, too.

Send $1.10 and get a copy of the book, and if our instructions are followed and you do not succeed the $1.10 will be returned to you. We also promise to return the money if the book does not give perfect satisfaction in all respects.

Introducing Queens.—Much is now being said in all the bee journals about introducing queens. I know no way so sure and one that requires so little time and trouble as the three-day method given in the back numbers of the APICULTURIST.

The Season here thus far has been unusually poor for bees. The warm weather in early May brought forward the fruit blossoms early, but the trees were in bloom but a few days when dull weather set in, and nearly all the early honey harvest was lost.

White clover commenced to bloom by the tenth of June, but the weather was so cold that the bees did but little on that. Therefore, the prospect for a good crop of honey here in New England is far from encouraging.

Hard Luck.—It is not often that we have to cry "hard luck," but we have had quite a set-back this spring in the queen-rearing business.

Out of two hundred fine queen cells less than fifty per cent hatched, and a set-back like this, so early in the season, compels me to ask our customers to be patient for a few days or till about the time this issue of the API reaches them.

By July 1 we shall have plenty of queens, so that we can ship by return mail. The cause of the non-hatching of the early queen cells was soon discovered, and the remedy at once applied. It was my opinion that the trouble was caused by feeding the bees with honey-dew honey which was taken from some hives of bees I had bought over fifty miles from my apiary. I use no such honey now without first scalding.

While bees all about me, say within a dozen miles, gathered honey-dew freely last year, none of it was taken by my bees.

A BIG BATCH OF QUESTIONS AND ANSWERS THERETO.

Hamilton, O.

MR. HENRY ALLEY:—

1. Would it hurt a queen to handle her by the thorax? Some say take her by the wings, but if we get hold of the wings on one side she would flutter and the wings might be torn.

2. Could you tell us how to transfer the queen from the shipping to the introducing cage?

[1. No. Handle queens by the wings taking hold of both wings at same time.

2. Let the queen out of shipping cage on the window, handle as above.]

Hamilton, Minn.

1. What is the best distance from centre to centre to space combs for extracting in upper-story?

2. Which is preferable for extracting, Victor frames $5\frac{5}{8}$ inches deep or those $8\frac{5}{8}$ inches deep?

3. What are the advantages and disadvantages of drone foundation for extracting?

[1. From an inch and three-eighths to an inch and a half. It would, in my opinion make but little difference whether it is more or less.

2. I know nothing about "Victor" frames, but will say that there would be less danger of the combs breaking if a shallow frame is used. Old combs would not break in extracting even were they twelve inches deep.

3 No advantage that I know of, but the more drone comb the more drones unless the queen is excluded from them. Very little foundation is made or used having drone cells.]

Hope Valley, R. I.

MR. ALLEY:

1. Should I use enamel cloth or other cloth over frames in connection with a honey-board?

2. In putting queen cells in the nursery, do you lay them down or fasten them up in their natural position?

3. To remove a queen from the combs and not hurt her do you take her up with the fingers or use a "catcher?"

WM. M. CHAPMAN.

[1. No.

2. Fasten the cell in, small end down, in one of the small holes in the cage. One of the apertures is for the sponge, the other for the cell.

3. We use no queen catcher. Always handle an old or fertilized queen by the wings. When removing a queen from the comb, take her by the wings and pull ahead and no injury will result; if pulled backwards the legs would be injured. A person who is not nervous can handle a queen most any way without injuring her, but a timid, nervous person should use a catcher, or handle a queen by the wings.]

MR. ALLEY:

I wish you would tell me if there are any good reasons for *not* returning a swarm that has issued back whence it came and setting them to work in old hives, thus preventing increase. Am willing to pay for having my questions answered if you will set your price.

W. W. F.

[The objection is this: if a swarm is returned without first destroying the queen cells, the bees would come off again the next day, or would kill the queen and swarm again when the first young queen emerges from a cell. Try our method given in the June "API." It is a part of our business to answer questions, consequently no charge is made for so doing.]

Telford, Pa.

MR. HENRY ALLEY:

If I am not asking too much will you please tell me how wood separators are made that are used to keep the comb separate in the section boxes? My object is to get as much surplus as possible in one-pound sections. Would it be desirable to give the bees twenty brood-frames or only ten?

A. PAUL GERHART.

[Wood separators are thin pieces sawed from thick lumber. They can be made for one section or for more. These separators are placed between each two rows of sections to make the bees build the comb within each section. The separators are made narrower at the middle than at the ends, so that the bees can get into the section.

If you want to get all the section honey possible, don't use over eight frames (seven will do much better), in the brood-chamber. The larger the brood-chamber the less bees will enter the sections. Keep the brood nest contracted by using few frames and that will compel the bees to enter the sections and while they are in them, if forage is plenty, they will build comb; and the field bees, or honey gatherers, will fill the new comb with honey.]

Yardly, Pa., 1887.

FRIEND ALLEY:

Received your Oct. APICULTURIST; in it saw advertisement of Alley's Nursery for Queen-rearing. You say virgin queens can remain in it for weeks. Now, friend A., I have some questions to be answered by you.

1. How long may a virgin queen remain unmated and after being mated become a fair queen? 2. Do those cells in your nursery cages answer for the second brood of queens or do new cells have to be put in every time? Will the old queen deposit eggs in the cells in the nursery cages or not; or do you have to let her lay eggs in brood frames and then cut them out? How many queens can be hatched at once in one nursery?

ELMER E. GREY.

[1. A virgin queen may remain in the cage from twelve to twenty-five days, and as soon as given a chance to fly after being introduced to a nucleus colony, will become fertile.

2. Certainly not; you do not seem to understand the workings of the Queen-nursery. A Queen-nursery is merely a set, more or less, of small cages in which are placed queen cells to hatch. The cells must be built by the bees, in full colonies, and when they have been capped seven days transferred from the combs to the Queen nursery. The cages are provided with food for the baby queen. When all is ready, a frame of brood is taken from a full colony of bees and the frame, in which the cages containing the queen cells have been placed, is inserted in its place. The honey-board or cushion is then placed over the frames or brood-nest, and in a few days the queens will have emerged from the cells; but as the cages are well supplied with food, the queens need no attention until the nuclei are ready for the reception of the queens, which will be when the bees have been queenless three or more days. Old queens will not deposit eggs in cells from which a young queen has just emerged.

Our nursery contains 21 cages, and 21 queens may be "hatched" at one time. We removed several nurseries to-day from full colonies, and found 21

fine young queens in each. Pretty good luck to commence with. You should read the Beekeepers' Handy Book. Think you would get more information from it in one hour than you will be likely to learn otherwise in several years.]

Walworth, Wis.

AM. APICULTURIST:

Can bees be wintered in a cave or root house near their summer stands? J. L. HALL.

[Yes. just as well as in a cellar, provided the cave is not too damp. No roots nor other vegetables should be in the cellar at the same time the bees are.]

Morgantown, Pa.

MR. ALLEY:

Do you consider the brown bees a better strain than the Italians? E. R. STYER.

[No, there is no strain of bees as good as the best strains of Italians. But there is a great difference in the Italians.]

Newport, R.I.

MR. ALLEY:

What is the best way to prevent moth worms, more especially in sale honey after it has been removed from the bees and is stored away, or is out being offered for sale? Also in spare either empty or full combs? I had trouble last season and would like advice before the trouble begins anew.

WALTER SHERMAN.

[Read the back numbers of the APICULTURIST and you will find replies to your questions. The worms do not trouble full colonies of bees. When a hive becomes queenless in the spring or at any time previous to Sept. 1, worms are pretty sure to devour the combs].

Gonzales, Cal.

AM. API.

QUERY:— Do you find that Cyprians and Syrians have the same characteristic with the Italians, of being slower than blacks to go up into the sections, when working for comb honey? Is that a feature of the yellow races in general, or of the Italians in particular?

Would specially like an answer from Henry Alley.

A. NORTON.

[I find the Cyprians and the Syrians are very much alike so far as entering the sections, and very much unlike the Italians. While the latter are very quick to enter the surplus boxes, the former are very slow to do so. I have not one word to say in favor of the Cyprians and Syrians, or any other imported race of bees but the Italians.]

Plainfield, Mich.

1. Is there any way to tell within a day or two when a new swarm is going to come out, so as to put on the queen-trap in time, provided you don't want to keep it on all the time?

2. Is there any particular time to catch and kill off the drones, or a part of them when there are a good many of them?

3. Is there not some way to extract honey from the comb without any kind of machine extractors.

4. Would like to know how to tell the *right* time to divide a swarm or hive instead of having them come out.

A. T. W.

[1. The only thing to judge by is to open a hive, and if there are queen cells capped or nearly capped, a swarm is very likely to issue within a day or so if the weather continues favorable.

A colony that is intending to swarm is not generally at work as smart as the others on the day of swarming. There will be considerable many bees about the entrance; many will be slowly working into the hive and while not doing much work seem to be somewhat uneasy. A swarm may be expected from a hive that is full of bees, and at any time when honey is plenty and the bees doing well, as it is called.

2. Would place the trap on the hive at any time when there appears to be a large number of drones in any particular colony. Place the trap on the hive from 11 A. M. to 3 P. M. Let the drones remain in the trap till next morning, then dig a hole in the ground, dump the drones in and cover them over.

3. None that I know of without mashing the combs as beekeepers used to do thirty years ago, or before the advent of the extractor.

4. Divide at swarming time, or later if you want to feed.]

Ashton, R. I.

EDITOR API:

1. I would like to ask you about two hives of bees that I lost last winter. There is quite a lot of honey in the combs somewhat soiled Now will the old combs do to use for new swarms?

2. If bees are put on such combs will not some of the old honey be worked over and stored for winter and injure the bees?

[1. Wash the combs thoroughly in warm water and place them where they will dry quickly. All the thin, sour honey will be removed by the operation and the combs will be sweet and clean and will not injure the bees if used again.

2. Some of the old honey might get stored and capped and not used next winter, but not much of it if the combs are treated to a good cleansing as advised.

Barton, Vt.

HUNTING BEES; INTRODUCING QUEENS.

Please give directions and description of apparatus necessary to hunt bees.

What is the best way for a novice to introduce a laying queen, having but one swarm and no other bees within two or three miles.

[Read the back numbers of the "API", also the methods given in this issue for introducing queens by Dr. Miller and G. W. Demaree.

Some one of our readers made this inquiry:

"Will a queenless colony carry in pollen?"

[Yes, during the early stages of the queenless condition of a colony the bees will carry considerable pollen; but, as the bees grow old, less pollen will be seen going into the hive, and what is being carried in will be in very small pellets, so small, in fact, that it can hardly be seen.]

GLEANINGS FROM CORRESPONDENCE.

Cedar Springs, Mich.

MR. ALLEY:

I like your strain of Italian bees, and all who have seen them admire them. Please give price for ½ dozen queens.

I packed my bees in the following manner: Half-inch bee space over the brood frames, wire screen on top, woollen blankets on screens and chaff cushion over all.

WM. McL.

Angelica, N. Y.

FRIEND ALLEY:—

HAVE never wintered bees so successfully, as during the past winter. Hav'n't lost a colony! Each one stronger, if anything, than it was last fall! Who can beat that?

I wintered my bees on their summer stands, and have come to the conclusion that is *the* way to winter them. The air around the apiary is fairly "yellow," to-day with the "little fellows," and I think the prospects are *good* for a heavy flow of honey this season. Now, if some aspiring bee writer would only tell us how to get rid of our honey at a remunerative price, what a blessing it would be for that "aspiring bee-writer"! But, as it is, "it might be worse," and certainly both bees and beekeeper ought to be happy.

READER.

Argyle, New York.

Please send your 32 page catalogue. Am sorry you have left your Price-List out of the API. It has been a destructive winter to bees in this section; no matter whether wintered in cellars or on summer stands. The loss has been from ½ to ⅔. There was a heavy honey dew last fall. Some attribute the loss to that.

O. L. WHITCOMB.

Gonzales, Cal.

FRIEND ALLEY:

I have a habit that, in spite of my efforts to suppress it, sometimes crops out; in writing rapidly. I misform letters, make omissions of words and punctuation marks that count much for the worse. I see that I did so in my last. By leaving out a period after *Eucalyptis* which ends in a sentence and making my capital "F" look like a "C." I made myself seem to say that the blue gum tree is a plant of the geranium family, etc.

Blue gum is *Eucalyptis globulus*, a tree from Australia; *Filaria* or *alfilaria* (the accent on syllable "ri" which sounds like "rē") is the Spanish name for a plant of the geranium family without the English name, except the corruption "filaree," etc. The mistake is mine, but if you will please to correct it you will oblige me.

The season is still dry, only about one-half crop of general products.

Accept congratulations on June issue and its articles on comb honey.

Truly yours,

A. NORTON.

Ai, Ohio.

MR. ALLEY:

Please send me ½ dozen Drone and Queen-traps. I bought some last year and would not do without them.

S. S. MUNSON.

Hamilton, O.

The APICULTURIST is far ahead of any bee journal I have seen for practical information.

J. K.

Stratford, Ont.

MR. ALLEY:

The queen I got from you last season has brought through the winter the strongest colony of bees I have in my apiary.

E. W. PANTON.

Denison, Iowa.

Accept my congratulation on publishing that most excellent array of articles on comb-honey in the June APICULTURIST. You have struck the key note of "helpfulness" in your journal.

Z. T. H.

East Templeton, Mass.

MR. H. ALLEY:

I see you advertise to send essays "How to Winter Bees." I can give you something better. Use the Bay State Hive. I have the one now that I bought of you I don't know how many years ago. It has wintered bees every time as no colony ever has died in it yet, and it stands in the same place now that it has stood for years.

RUFUS STICKNEY.

Ohio, Ill.

DEAR SIR:

I received the drone and queen-traps and all were sold within one hour. Send me 25 more.

R. M. KNIGHT.

Lawndale, Ill.

MR. ALLEY:

Please continue the API. There is not a more thoroughly instructive bee journal published, and the articles are timely and to the point.

The queens I procured of you last season are uncommonly fine.

F. C. BLOUT.

Upper Jay, Essex Co., N. Y.
June 7, 1887.

HENRY ALLEY.

I received your Queen and Drone-Trap and like it very much, for yesterday the first queen that you sent me led out a large swarm and I did not have to climb trees after them.

A. D. KNAPEN.

HIS WIFE LIKED IT.

MR. ALLEY:

We bought one of your drone and queen traps last season and my wife likes it so well that she would like about one dozen more of your improved traps. Please ship them. $3.50 inclosed.

J. G. HILL.

[We have sold several thousand traps the present season, and of the 50,000 in use not three customers have found any fault or made any complaint of them. We guarantee the traps to work and do all we claim for them.]

Springville, N. Ca.

I take four bee journals, but like the "Api" best of all.

John Baptis.

I consider the American Apiculturist invaluable to apiarists.

A. G. W.

Christiansburg, Ky., June 4, 1887.

Friend Alley.—Though ever so busy and half sick, I have prepared a hasty MS. for your July issue. The June issue of the "Api" is decidedly a success. It would be hard to beat the general make-up of your paper. I am glad to see it prosper.

Our bees have got on slowly and badly till a week past; weather unfavorable, wet, cloudy, cool in turns. Bees are right now gathering honey rapidly, "kind of pouring it in."

G. W. D.

NOTES FROM THE BAY STATE APIARY.

Henry Alley.

SHIPPING BEES.

I have received several lots of bees from parties residing a long distance from Wenham, and from men who ought to be considered expert beekeepers; yet not one lot out of all sent me were properly packed, as all the combs in some of the hives were broken off at the top of the frame and more or less of the combs were broken in all of the hives but one. In one case a very large colony was shipped to me from a place which required a week's time in coming; yet, this colony was not given half as much room as the quantity of bees it contained should have had. The consequence was that two-thirds of the colony and all the brood were dead.

A large colony, even though it is to be transported but a short distance, should have a space of not less than two inches under the frames, and certainly four inches above them. Unless plenty of room is given the bees to cluster off from the combs, the heat created by the bees and brood combined, will certainly destroy the entire colony. The hive in question was covered with wire-cloth, both top and bottom, which was just right; and, had sufficient space been given for the bees to cluster away from the comb, there would not have been one half a pint of dead bees in the hive, notwithstanding the fact the bees were on the road five days. Another full colony was shipped from Vermont; the condition was very fair, but had the weather been warm as it was a few days previous the colony would have been ruined, as the combs were new, and there was nothing between the bottom of the comb, and bottom of the frame, nor between the bottom-bar and bottom of hive to keep the combs from breaking. As it was, only two combs were broken and all in a heap in the bottom of the hive. One 3-frame nucleus came by express, and as the packing was about the same as with the full colony all the combs were broken, the brood dead, and all ruined but a pint of bees and the queen.

If this reaches the eye of any of those parties, who shipped those bees, I hope they will not forget when they pack and ship more bees to give plenty of ventilation, and by all means, place some pieces of wood between the bottom of the combs and bottom-bar of the frame as well as under the frame. Bees thus packed will go safely hundreds of miles.

When I have a colony packed and all ready to deliver to the expressman, I then dash about a pint of cold water in among the bees and combs. This will supply the

colony with water, for twenty-four hours at least and it also has a tendency to keep the bees cool and quiet.

I once received a colony of bees from the west which were packed splendidly. Above the combs was a space of about three inches, and water was supplied the bees by rolling up some burlap and thoroughly saturating it with water. This bundle of old bagging was fastened in the space over the combs. It was the best method I ever saw for supplying water to bees while being transported.

MARKING HIVES.

The beekeeper who has a large apiary, or who is rearing a large number of queens cannot stop to make a written record of everything going on in the apiary. Mr. Doolittle has given his plan for keeping a convenient record of each colony of bees in his yard, but such a method would not do for me. I must have something more convenient and easy to handle. Mr. D. uses small stones placed on each hive to indicate the condition of each particular colony ; that is very good, and I sometimes use stones myself for certain marks. I carry in my pocket some large flat-headed tacks, or nails. Should the reader visit my apiary he will notice that each nucleus hive has one such nail sticking in some part of the cover of each hive but not all are placed in the same position. When a nucleus is known to be queenless the nail is invariably placed in the front edge of the cover of the hive. A nail has been thus used in my apiary for nearly twenty-seven years. When the nail is placed on the *front* of the hive it indicates that a queen-cell was recently put in the hive. Now if a lot of cells are introduced, say to-day, the nail is placed in the centre of the front of the hive. If another lot of cells is given other hives the next day the nail is placed at one side of the center of the front, and so on. The different positions of the nail when placed in the cover of the hive indicate the different lots of queens or cells that have been introduced from day to day. When I want a lot of queens to ship I am not compelled to open every hive in the yard to find those laying. I keep the run of all the queens that are likely to be laying by the position of the nail. For instance, when the nail is sticking in the centre of the cover I know that that queen has been in the hive long enough to become fertile. I open the hive and find that the queen is laying. Well, now if those hives that have the nail in the centre of the cover are opened, twenty-four out of twenty-five queens will usually be found laying. The advantage of the nail system will readily be seen by anyone, as it saves much time and labor, when one has 300 nucleus hives in his apiary to attend to. Some one will say, "wonder how one can know what hives contain tested queens or a very fine queen?" Well 'tis easy enough. When a hive contains a very choice queen two nails are placed side by side in the cover of that hive or three nails as the case may be. It is no trouble to keep a lot of nails in one's vest pocket for use at any and all times. One nail is generally all that is needed for a hive during the season.

QUEEN-REARING.

Although we had a set-back early in the season by the cells not hatching, we are now doing well, and can forward queens by return mail.

This spring we have purchased several quite large lots of bees of various strains. Some pure *black*, hybrids and some fine and very pure colonies of Italian bees. The

latter were purchased of Mrs. Mary E. Pray of Greenland, N. H. The husband of Mrs. Pray was one of the most enthusiastic beekeepers in New England but by the merest scratch to his foot from a rusty nail in August last, while he was repairing his house, he lost his life by lock-jaw in just nine days after the wound was made. Mrs. Pray could not care for the bees and so we bought the lot, and moved them to Wenham.

We found among the bee fixtures of Mr. Pray all sorts of modern appliances used in the apiary. He was a beekeeper who kept up with the times as all beekeepers do who take an interest in apiculture.

BLACK BEES IN SHIPPING CAGES.

As we have stated in our manual of queen-rearing, black bees are far better for nurse bees than the Italians, and so when we can find such bees for sale at prices to suit us, we purchase them. Nearly all our nuclei are made up of black bees, and when we ship queens more or less dark bees will be put in the cage with the queen. This fact is mentioned to save some of our customers from writing thus: "If the bees in the cage with the queen you sent me are some of her progeny she must have met a black drone." Oh dear! how many times we have had to write and explain this same thing during the past thirty years.

Don't forget that we have perfect control of the drones in our apiary by the use of the drone-trap. No black drones ever fly during the queen-rearing season about here.

SMALL QUEENS.

Sometimes a patron for a queen will write and say "the queen was received in good condition but looks small." Of course the queen is small; why shouldn't she be after being confined in a small cage for nearly a week and having in the meantime travelled nearly 2,000 miles in some cases? When the queen has been introduced to the colony a week, then your opinion concerning her will be in order.

Wenham, Mass.

All who Subscribe for the APICULTURIST, at any time, will receive one of our combined Drone and Queen-traps free by mail. This is our method of introducing the APICULTURIST and our Drone and Queen-traps into every apiary in the United States.

Those who receive the trap as a premium must not expect to get the Handy Book or a queen for fifty cents, as the profits are so small that only one premium can be given each subscriber.

NOTICE.

We do not advertise to give premiums to those who subscribe through other parties. We pay news' agents a percentage on all subscriptions sent us, and if you choose to give the agent a profit instead of sending direct to us, it is no fault of ours.

Our Club Rates.

Am. Apiculturist and Am. Weekly Bee Journal,	$1.80
Am. "Api" and Gleanings (semi-monthly)	1.00
" " " Bee Hive (bi-monthly)	1.00
" " " Beekeepers' Handy Book	1.50
" " " Cook's Manual	1.70
" " " A Year among the Bees	1.50
" " " Alley's drone and queen trap	1.00

TO ADVERTISERS.

We will accept of bees, sections or foundation in exchange for advertising space in the APICULTURIST.

H. ALLEY.

Bees by the pound.—If one has some nice combs, a good colony of bees may be reared in a few weeks by purchasing a pound of bees and a fine queen. Sugar can now be purchased in most places at the rate of 15 lbs. for $1.

We can fill a few orders for bees, and queens with them, at the rate of $1.50 for bees and $1.00 for the queen. They will be packed in good shape and safe delivery guaranteed.

The June number of Api should be read by all who take an interest in apiculture. Our readers will find METHOD NUMBER SIX in this issue by R. L. Taylor. All the essays will be stereotyped so that they can be supplied to all who desire them, by and by.

FACTS ABOUT HONEY.

Honey is the only purely natural sweet in a commercial form. It is the nectar of flowers gathered and stored by the bees, and changed by them to the smooth, mellow sweet known as honey. It furnishes the same element of nutrition as sugar and starch—gives warmth and energy. Starch and sugar when eaten undergo a digestive change before they are assimilated. In honey this change has been made to a considerable extent by the bees. It is partly digested, easy of assimilation, and concentrated. The longer honey is on the hive the more complete is this change. It derives its flavor from the blossoms from which it was gathered. There is as much difference in honey as in milk or butter, and the same liability of adulteration. Owing to low prices, caused by improved methods and increased production, it is less adulterated than formerly, probably no more than other food products. Now every producer's name is on each package, and he thinks as much of his reputation for producing a good article as does the producer of choice fruit or butter.

Almost all pure liquid honey will candy or become hard at the approach of cold weather, unless sealed while hot. This is one of the best tests of its purity. Candied honey can be liquefied by placing the jar in water or an oven and heating until melted. Overheating injures the flavor. Adulterated honey will not completely candy. Comb honey can be adulterated only by the producer. Its wax furnishes an agreeable non-irritating bulk so desirable with concentrated food, and as chewing is necessary proper digestion is promoted.

As a table ornament which appeals to both eye and palate a plate of delicate comb honey is unexcelled. Extracted honey is the liquid honey thrown from the combs, pure and bright, by a machine called an extractor. Strained honey is obtained by mashing combs of honey, which often contain immature and dead bees, and bee bread and straining: this is inferior in flavor and appearance. Extracted honey can be sold for less than comb honey, as the combs which are more valuable than honey are saved, and used time after time.

As a medicine, honey has great value and many uses. It is excellent in most throat and lung affections, and is often used in place of Cod Liver Oil with great benefit. Occasionally there are found people with whom it does not agree, as is the case with other articles of food, but the majority can learn to use it with beneficial results. Children, who have more natural appetites, generally prefer it to butter with their bread. Honey is laxative and sedative, and in diseases of bladder and kidneys is an excellent remedy. It also partakes of the medicinal properties of the plant from which it was gathered. It has much the same effect as wine or stimulants without their injurious effects, and is unequalled in mead and harvest drinks. As an external application it is irritating when clear, and soothing if diluted. In most country places the qualities of honey are appreciated, and it is much used for croup and colds.

In preserving fruit in a natural state the formic acid it contains makes it a better preservative than sugar syrup. In cooking and confections it is also used.

[The above was taken from a circular published by Mr. Samuel Cushman of Pawtucket, R. I. These circulars are given to each purchaser of his honey and is one of the best methods for increasing the sale of honey.]

Mr. Arthur Todd has been unwell for several weeks. As soon as he recovers his usual good health he will furnish the readers of the API with some fine articles under the head of Foreign Notes.

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., AUGUST 1, 1887. No. 8.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt delivery. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass

For the American Apiculturist.

CARNIOLANS, NEW RACES, ETC.

DR. G. L. TINKER.

THE impression seems to prevail that cross-bred and hybrid bees are not very desirable; yet the almost universal testimony is that they are superior workers, often making the largest surplus. Many beekeepers prefer a hybrid strain of bees, paying no regard to color, temper or traits, caring only for first-class working qualities and the dollars and cents of the business; and many of our best authorities, like Professor Cook, have held for some years that the best bees of the future are likely to be an intelligently selected, cross-bred bee, made up of the blood of a number of our present races of bees. Such is also my impression as well as that of quite a number of queen-breeders, all aiming and working for a high-bred bee, combining all the more desirable qualities minus the objectionable ones of the best races.

In characterizing the Carniolans as hybrids, that through long interbreeding have become an established race, I had not anticipated the friendly criticisms of Mr. C. L. Fisher on page 116, and Mr. A. Norton on page 152, or I should have made myself better understood in regard to what constitutes hybrids among bees.

It is a well recognized fact that, excepting the blacks, not one of the races of bees breeds strictly to a type. The black or German bees are no doubt a fixed and original race, as indicated by the slight variation in the breeding of queens and drones. All the other races are, strictly speaking, hybrids, or the result of the interblending of two or more of the original and distinct races, which may have been Germans and Egyptians as some writer has already suggested. The difference, then, in the recognized races of bees in the south of Europe and in the Orient, is simply in the relative preponderance of the original races blended in each. How do we know? Why, by the fact that by intelligently pursuing the variations found, we may develop a black strain of bees from any of these yellow races or a more distinctive yellow type. The queens and drones all present marked variations. Each race has marked characteristics, but never breeds strictly to a type. The variations are readily accounted for by supposing an original admixture of the black and yellow races in their make up, so that both theory and experiment con-

firm the probability of such an admixture.

The experienced queen-breeder does not look to the worker bees of any race or strain of bees for typical markings. He will invariably scan the queen and drone progeny. If they present considerable uniformity of markings he knows that the stock is a fair representative of the race-type or strain to which it belongs. For instance: the Carniolans, as I have seen, and as Mr. Frank Benton has stated, present quite uniformly marked workers, but many of the queens are "as yellow as Italians." See his brieflet entitled "Bees," dated Jan. 20, 1886. I have also seen pure Carniolan drones finely marked with yellow similar to Cyprian drones. My inference that the race is an original cross with the Cyprians is founded upon the statements of Mr. Benton in regard to the results of crossing these races. I have been unable to find them among my papers, but they prove conclusively the close relationship of the Carniolans to the Cyprians.

It would be useless to speculate how the original crosses were made whether by the hand of man or in the course of nature; most probably the former. The introduction of a few Cyprians into Carniola within the last thousand years would be sufficient to modify the existing strain of black bees, if a small Cyprian apiary had been established as would have been probable in case of an importation.

As to the Italians, not only are there black bees and "natives, too," as Mr. Benton remarks, in Italy, but Italian queens and drones present unmistakable admixture of black blood. I have yet to see the Italian queen, and I do not believe such a queen can be found, either high-bred or imported, that will not produce an occasional queen, say one out of fifty (generally more) having one, two or more dark stripes across the top of the abdomen and among her drones a few that are dark. All such queens and drones will speedily develop black bees, and it will not be necessary to carry out the experiment to satisfy any experienced queen-breeder of the result, whether my friend Mr. J. E. Pond, jr., believes it or not. The so-called leather-colored Italians simply represent a greater per cent of black blood than do the light-colored bees.

The above facts will convince all, I think, that no harm will come from the crossing of any of our present races of bees. They will further show how very great is the field for improvement to the intelligent queen-breeder. There is one other fact in this connection that I must not fail to note, and that is that a very gentle strain of bees can be produced from any two of our races of bees that may be selected, although the first few crosses will be often ugly. This I have proved with blacks and Italians, with Syrians and blacks, with Syrians and Italians and with Cyprians and Syrio-Albino bees.

The writer is particularly interested in cross-bred bees, believing that the most valuable and the most beautiful bees of the future will be produced by intelligent crossing. But let no one think that I do not value the Carniolans. They have many good traits and some very bad ones. They have the marked characteristics of the black race, one of the most objectionable being the disposition to rear too many drones and the building of too much drone comb. Though they be given a full set of worker combs they find no difficulty in rearing hosts of drones. In this respect the Carniolans can easily discount every other race.

In marked contrast are the Syrians and Cyprians which Mr. Benton long ago observed reared few drones. And all crosses made on the maternal side from these races continue these marked characteristics that are so valuable in the production of comb honey.

New Philadelphia, O.

For the American Apiculturist.

CARE OF COMB HONEY.

R. L. TAYLOR.

In a former article I have given it as my opinion that it is better to leave comb honey on the hive as long as convenient, but intimated that it should be taken off at or soon after the close of the clover and basswood season. This latter point is important, for while the bees will not discolor the honey to any great extent while they are actively engaged in gathering nectar, yet as soon as nectar is no longer to be found they turn their attention to the collecting of propolis which they bestow freely, not only upon every exposed part of the sections but also upon the cappings of the honey.

It is also to be observed that the appearance of comb honey is often permanently injured in taking it from cases or wide frames during warm weather and before the process of curing has hardly begun. At this stage the comb is soft and the honey comparatively thin and it requires but very little force to wrench the section slightly when of course the honeycomb yields with it. The result of this wrenching, though so apparently trifling that there is no resulting leaking and no cracking of the cappings to be seen, is that the honey in its still uncured state soon runs down against the cappings in every disturbed cell, giving the honey an appearance of having "sweat" which no subsequent curing, however perfect, will remedy. So I deprecate the removal of honey from cases or wide frames except in case of necessity until it is well cured.

Again, if one does not succeed in inducing the bees to leave the cases of honey soon after taking them from the hive, a third defect in the appearance of the honey which cannot be subsequently remedied is caused. It is the fouling of the honey by the bees when cooped up in the cases for a day or two. The way to prevent this is of course to get the bees out of the cases as expeditiously as possible. To do this the first process is always to smoke out and brush off as many as possible in the two or three minutes required to take the case from the hive; then, if the bees are actively engaged in gathering honey, allow the case to stand on end on the top of the hive from which it came for fifteen or twenty minutes when it will be found free from bees.

Another way is to pile the cases, so as to give the light free access to each, under a bee tent with a small hole in one or more of the upper corners, when the bees will soon leave the honey and the tent.

A third method is by means of a honey house with windows and screens thereto, so constructed, as to give the bees free exit but so as to forbid them entrance. In such a house, stack up the cases as above so as to admit the light freely. The honey will soon be deserted by the bees, but if the quantity of honey is great the bees will cluster in the windows and go out slowly, resulting in the soiling of the windows and more or less dead bees scattered about. I

so dislike this method that I seldom employ it.

The last method I shall give of dislodging the bees is one I discovered last season and so far I like it best of all. The process is as follows: smoke out and brush off the bees as before and place the cases in compact, bee-proof piles twelve or fifteen high, then upon the open top of the pile place a covered, bottomless hive containing a few combs one or more of them filled with brood not yet capped. The brood will attract the bees and in a few hours they will be found clustered in the hive when they can be removed, leaving the honey ready for storage.

Having observed these preliminary cautions, we are prepared to attend to the process of curing our crop, with the satisfaction of knowing that, with a good honey house and ordinary care, we may now have our honey not only fine in appearance but excellent in quality and capable of being kept in store for a year at least, with its quality all the time improving. To accomplish this, both warmth and dryness are indispensable in order to induce the atmosphere to take up and carry away as much as possible of the moisture contained in the honey. The honey house therefore should be constructed with this object always in view.

In the first place, I deem it of the highest importance that it be built throughout so that the inside temperature will not be easily affected by the changes outside, in order that it may not be necessary to keep up constant fires in it during cold weather. From my own experience I do not hesitate to say that the floor, the ceiling and all the walls should be double and packed with dry sawdust or with some other substance equally good for the purpose; the walls should receive in addition a thickness of building paper, and the windows should be neither numerous nor large. In such a house one fire a day or even less often will prevent freezing during zero weather. Then in planning the house an eye should be constantly had both to the foundation and to the inside finishing with the view of securing dryness. I should finish it inside with wood which would look much better with paint but is better for the honey without paint. The house will, of course, be furnished with a chimney and a stove, both of which must be thoroughly safe, and the windows should be furnished with some good device permitting bees to go out but preventing their entrance. One part of the honey room may well be equipped for a work shop to be used during wintry weather. In this room the cases of honey should be stacked up in such a manner as to give the air a chance to circulate freely through every one. The warm, dry air of summer may be allowed to circulate freely through the open windows but never admit damp air, particularly if it is of a higher temperature than that of the room. If a free circulation of the air is permitted, a fire will seldom be needed during the summer months; but, as the raw days of autumn draw on, kindle the fire more frequently. Keep the temperature up to 70° or 80° F. as much of the time as possible, and never permit it to go down to 32°. It would be all the better, if convenient, to keep the temperature even higher than 80°. Honey treated in this way for four or five months becomes a real delicacy, not at all to be compared for table use with new honey, nor with honey less carefully handled. More attention ought to be paid to the quality of honey and buyers

should learn to discriminate in this regard.

It seems to me that there is no action within the reach of beekeepers that would do so much to stimulate the honey market as a general, decided movement of the fraternity for the purpose of securing the more perfect of comb honey.

Lapeer, Mich.

A HOT DAY IN JUNE. BEES.

MRS. H. HILLS.

"Oh, my prophetic soul!" When friend Asheraft asked about the bees, on the day after they were removed from the cellar, I answered him that the prospect was discouraging.

"How so? I thought they were wintering finely."

"Ah, yes; much too finely for one woman to manage at swarming time."

The fact was, the hives were running over with bees, on that very first week in April, and the prospect of my ever being able to control them in June looked discouraging enough. Thirty-one colonies, nearly all heavy, and the little nucleus, on three crosswise L. frames, as saucy as any of them. Even a novice like myself could foresee trouble ahead.

It is certainly a fact, that the bees thrive wonderfully with me. I do so love to build up the colonies and the nuclei, and see them increase and multiply. I cannot endure to have a single one in the apiary that is not thrifty and happy, and well-to-do. Plenty of food and warmth, with a good queen, and all will thrive beautifully. But what shall I do with all the bees? It was just so when I used to keep hens, and raise chickens. Fifteen eggs placed under a hen almost invariably meant fifteen chickens. But there was no market for chickens, at that time, and besides, Mephisto declared he would no sooner kill one, than he would kill a man, and he believed it equally wicked. What could I do? They flew over their palings, and were the terror of the neighbors' gardens, and we could not *give* them away unless they were dressed. I suspect it will be so with my bees. I certainly would never destroy a colony, neither would I give one away, in the fall, to be starved by unsuccessful beekeepers.

Well, by May 20th the bees had gathered enough spring honey to winter on, if I venture to use it for that purpose; and were ready to swarm. Then came a set-back of two weeks of bad weather. Finally on June 3, the first one got out; two weeks later than last year. The weather continued unfavorable, and the morning of June 6th did not look at all promising. I kept crowding on surplus, and as the sun appeared to peep out, was just starting out with a case when neighbor Crocker and his good wife appeared; come to have a talk about bees. As we stood at the door, out came a swarm. The weather had been so unfavorable, that I had not yet put on the queen-traps, and while hiving this one, another issued. Then the sun came out so hot, that it seemed like an oven. Then more swarms came out, till we had five. Strangely enough, they showed no inclination to unite though there were all of the time, as many as, or more than, two in the air. Such a forenoon as it was. Neighbor Crocker assisted as best he could, while Mrs. C. stood on the piazza and gave notice of the swarms. Finally, they were all

safely hived, as noon struck. As for myself, what with the excessive heat, and extraordinary exertion, I was fit for nothing but to go to bed at once. But the beekeeper never rests in June. I dreaded what would come next, and immediately began dividing. But in spite of my utmost exertions, five more issued on the eighth and four on the eleventh and so on; but I had got on queen-traps, so far as they went; if I had had enough to "go around," and persisted in keeping them on, both before swarming, and on the prime swarms, I should probably have been quite safe, as there was no after-swarming as yet.

In my last report, I very proudly said, that I had never lost a colony from any cause whatever. What I wish to ask at this writing is, whether a prime swarm is a colony. How does one lose bees, when they winter perfectly, and robbing them is an impossibility? Well, answer for yourselves; I shall not say how. Perhaps the fastnesses of Tamarac swamp could tell. "Oh, my prophetic soul!"

Those first ten days of June seem like a troubled, painful dream. I felt somewhat displeased last season, at what Mr. Heddon said about women keeping bees. But I thought of him with different thoughts on those hot days. There was no respite, no safety, even in queen-traps and clipped queens, without a continued, and still continued cutting of queen-cells. And then such multitudes of bees — such heavy swarms. Sometimes they would have the good luck to lose their queen, for which event, may all good Christians pray; for surely, we do not want any more eggs laid.

I am glad, at least, that the awfully cross hybrid colony is not in the apiary, even if Mephisto and I did run half a mile in the direction of Tamarac swamp, at high noon, of the hottest day, a spectacle for gods and men. "Oh, my prophetic soul!"

Such swarms! why, they would stay in nothing smaller than a two or three-story ten-frame L. hive, and even these had to be filled with extracting combs, with the remaining honey upon them, to entice them. They could not see a card of brood. Talk of section cases! They would stay in no such if you gave half a dozen; and they would no more stay in the Heddon hive than in a teacup. Now, what am I to do with all these bees? They are all on their thirty stands, some double, some treble; and they have all got to get themselves back into their thirty hives, after the season is over, by some means.

Meanwhile, do I like beekeeping? Often, at the close of the most difficult days, there comes like a vision of delight, a white messenger from Starrie, who whiles away the long delicious days among the cool retreats of the hills and valleys and islands of New Hampshire, with dear friends of early years; and, to-day I would not exchange places with her.

Sheboygan Falls, Wisconsin.

From "Gleanings."

A HOUSE FOR THE APIARY.

PROF. A. J. COOK.

MR. ROOT: I have been giving much thought of late to the plan for an ideal house for the apiary. You will remember we talked of it while you were here. I have also conferred with such authorities as Messrs. Hutchinson, Doolittle, Doctor Miller, Heddon, etc. It seems to me that this is a question

of exceeding importance, and I wish to submit my drawings and reasons for this plan for criticism, that we may secure the very best. The house is three stories—a cellar 7 feet deep; first floor 8 feet and chamber 6 feet at the lowest part. The cellar is for wintering bees; the rooms above are for honey-extracting and shop; the chamber is for storage. The cellar has two rooms. One, for bees in winter, is 18 x 24 feet. This is entirely

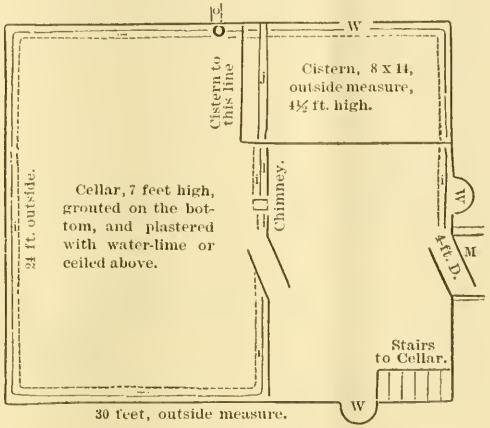


FIG. 1.

D, 4 ft. double doors.
I, gutter.
J, stone wall 4½, or all the way up.
L, double wall lined with paper.
M, passage way from cellar, with stone abutments on each side and level with outside, so a wheelbarrow can be run in and out.
O, drain of 6-inch tile—Dr. Miller says 10-inch—following the dotted lines two hundred feet, and all the way below frost or variable temperature mark.
W, cellar windows, 1 x 2½ ft., double, outer glass and inner wood. Both are hinged above so as to open it easily.

under ground, with a good stone wall, grouted below and plastered above, with a double floor grouted between—to secure against mice and cold alike and with the partition wall double with double doors. At the centre of the partition wall a small chimney runs from the bottom of the cellar up to and through the roof. Just within the wall of this room is a small gutter which extends nearly around the room, as seen in the drawing, from one end of a cistern to the under-ground sub-earth ventilation-pipe which runs two hundred feet or more underground. Thus this pipe of four-inch glazed tile serves for sub-earth ventilation, overflow-pipe for a cellar cistern, and it can be made to empty the cistern and cool the bee cellar at any time, the water passing through the small gutter.

In the other room of the cellar, which is 8 x 24 feet, there is a cistern 8 x 14 feet and 5 feet high. As will be seen, this extends two feet into the bee cellar, yet the partition is tight, except a small hole just at the bottom, so we may say we have two cisterns—one a small one in the bee cellar, the other a large one in the other cellar, though they are connected at the bottom. The other room, which is a sort of vestibule for the bee cellar, has two windows—one (1 x 2) by two feet and stairs to the room above which are covered by double trap-doors. This room is

entirely underground, though the outer double door which is four feet wide is, because of a natural slope of the ground, on a level with the outside, or else is inclined so we can easily run a wheelbarrow into the cellar. The windows may receive light by a half circular excavation, or, if desired, may be above the earth at this southeast corner of the house.

Here, then, we have an arrangement by which we can control the temperature perfectly, from October to May; and from an experience extending now over eight years, I am sure that, with enough good food, bees are entirely safe in such a cellar. By aid of the cistern there is no occasion to use ice to reduce the temperature in the spring; and we can, by aid of sub-earth ventilation and cistern water, keep the temperature just to our liking all through the winter, with almost no trouble and at no expense. This is no theory; it is a demonstrated fact. As the bees can be wheeled into the cellar, their removal to or from the cellar is a very light task.

On the ground floor, which is on a level with the earth outside, there are three rooms. One on the southwest, 12 x 15 feet, is for extracting and extracted honey. It has a hard-wood floor, wide outer door and only one thickness of wall, so that in summer it is kept very warm, and so enables us to ripen honey without leaving it in the hive till it is all capped.

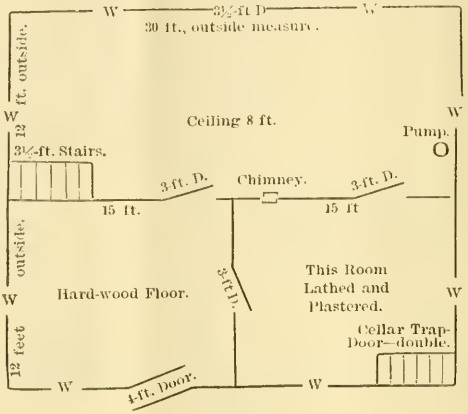


FIG. 2.

D, doors, the double one at the bottom having a sill so low a wheelbarrow can be run over it, outside door being of gauze.

W, windows, all of which have wire gauze screens outside and hinged to swing out. Screens on four south windows to extend four inches above upper jamb, with one-half inch space.

Posts, 11 ft. Studding, to chamber, alternate 12 and 18 inches apart (?). Side studding 12 feet long and 1 foot apart.

Floor, double, one foot apart, and with grouting.

Cellar and house mouse-proof.

This is also a demonstrated fact. The joists above are just so wide that they serve as frame-supports. The windows are poised with weights, and these and the door have an outer gauze hinged frame. In case of the windows, this extends three inches above the outer wall, leaving a half-inch space, so that bees can easily pass out, while they do not pass in.

A second room on the southeast is also of the same size, but is double walled, lathed and plastered. It

contains a stove, but has no outer door. It is for comb honey, for an office, and has trap-doors to cellar stairs. I find that some are not in favor of this room, but I think it very desirable.

The entire north side of the building is for a shop. This is 12 x 30 feet. It has a pump from the cistern below and stairs to the chamber above. It has an outside door, four windows and a door into each of the other rooms. There will also be a stove in this room. In winter, then, when we have a fire in either room, the chimney will be heated, and the air drawn from the bee cellar. The wind, too, passing over the chimney, will suck the air from the cellar. In both cases the air is supplied through the long, sub-earth pipe, and so is tempered by the temperture of the earth and is kept sweet and pure. This is both theory and demonstrated fact. This room is large enough so that a small engine and some machinery can be introduced if desired. I find that this house, large enough for a large apiary, can be built for $500.00; and for safety and convenience I believe it fills the bill. I cannot agree with Mr. Heddon that we had better have double-walled houses above ground. I think the cellar far better and more convenient. I shall be very glad to have this plan criticised in the next number of "Gleanings," for, as stated before, this is a matter of great importance to all beekeepers in the northern states and in Canada.

Agricultural College, Mich.

[Professor Cook forwarded the above article to us for publication. Criticisms on the same are now in order. Those disposed to give their opinions of the above plan for a bee house and work-shop are invited to do so for the "Api."]

For the American Apiculturist.

BEE MATTERS GENERALLY.

G. W. PORTER.

A GOOD WORD FOR THE API.

I congratulate the manager on the improvement visible in all the late numbers of the APICULTURIST.

The progressive bee master who desires to keep abreast of the times cannot fail to appreciate it. You deserve the thanks of all.

The best thoughts of the brightest workers in the field of scientific apiculture as it is now being developed, conveyed in clear type, must ever be welcome to those who are seeking for new light.

Our friend Demaree in the July issue says he finds that "the advice given in the standard works on bee culture are misleading when they advise building up weak colonies."

In this I think he is open to the same criticism, for it will be apt to mislead some who are not experts.

It is excellent management to deplete strong swarms under certain conditions: as, for instance, when forage is not sufficient to sustain new swarms; and, when queens can be had, the "ne'er do wells" can by such aid, and with young queens added, be made very productive colonies.

He well says, "it pays me best to depend on the strong colonies for surplus." *But*, we want to increase the number of such colonies and it can be done very frequently in that way.

A general movement for equalization, without the precaution of providing good queens, would be detrimental and in that way I take friend Demaree's words.

All agree that success depends upon the queens. We all know that, tinker as we may, and coddle

till the season is done, some colonies never yield a profit; and we realize when too late that we failed to remove such queens.

In the hiving of new swarms he has got the thing mixed badly unless the types are at fault, as they sometimes are.

He shakes off all the bees from the combs into the old hive and the combs are placed in the new hive. But the now *empty* old hive (empty with bees in it) receives the new swarm.

"Query." What is to people the new hive and take care of its brood?

"Not one time in a dozen will a second swarm issue!!" We reckon not.

The plan I have practised several years is to take about one-third to one-half of the brood from the old hive and adhering bees, to the new hive and hive the swarm in that, putting on surplus cases from the old. I have not had a swarm leave nor an after-swarm in all the time I have practised this way; and I keep from eighty to one hundred and twenty colonies. My policy has been to check increase and avoid swarming. I have so far succeeded in that not more than one-fourth of my colonies have ever swarmed in one year.

The old idea that bees never swarm except when lacking room is disproved completely.

In fact, if science be knowledge systematized, then apiculture may hardly be considered a science as yet; for there is nothing certain, so that a few "anarchist" bees may not tip all of our wisely laid plans.

For instance, knowing that friend Manum practises clipping queens' wings, and having a greatly valued souvenir of that master's triumphant skill, in the shape of a photograph representing him with three great swarms strung on the ends of so many poles, caught in the manner he so aptly describes in your June number, with many very tall trees near my apiary I resolved to try it.

My first swarm came out May 2. Having a prime young queen I clipped her wings. In five weeks she issued with a swarm and fell near the entrance and was found too late to catch the swarm and so she was put back and the colony reduced by two combs of brood all cells being cut out.

Twelve days later a swarm again issued and I found a lot of capped cells and no young larvæ.

They had (probably it was a squad of "nihilist" bees did the job) balled the queen and then raised a new queen. The one cut cell evidenced the fact that a virgin queen led the last swarm out.

Again: destroying a black queen preparatory to introducing an Italian I found two days later that a fine Italian had already entered upon her regal sway. Whence came she? She must have entered without a letter of introduction.

I am sure that most observing apiarists can record freaks which upset all calculations and often run counter to all law. They often move without rhyme or reason it would appear.

We have had a most singular season here in Virginia. With abundant natural flora in field and forest, there was no secretion of nectar or next to none till the last week in June.

Fruit bloom very abundant; locust bloom and poplar also very abundant (and all generally a fruitful source of nectar here) were followed by white clover, yet no nectar. Now they are just booming in white clover and blue thistle honey of the finest quality at a season when we usually begin to wind up.

We had a very wet May and several heavy rains early in June so that grass and grain crops are fine.

Charlottesville, Va.

For the American Apiculturist.

THE SOLAR WAX EXTRACTOR.

MRS. SALLIE E. SHERMAN.

I WANT to tell the readers of the "API," but more especially the ladies, what a great convenience the solar wax extractor is. I thought the Swiss extractor a great labor-saving arrangement, but it does not compare with the solar; as we neither need wood nor water, Sol doing all the work. All you have to do is to raise the lid and put in your pieces to be melted into beautiful wax by the rays of the sun. Be careful and not put in too much at a time, for in that case the sheet iron does not become hot enough to melt it, and it requires a much longer time to extract all the wax thoroughly from the comb than when put in in smaller quantities. This I found out in a few days after getting my extractor, as a neighbor seeing what a good thing it was brought over nearly a bushel of old comb from several hives in which the bees had died. I put it all in at once and thus early found out my mistake; hence the caution to others. My extractor was made from directions given by Mr. Demaree in the "American Bee Journal," except that the workman said he did not see the use of making the sash like a shallow box two inches deep as directed by Mr. D., so he just made it even or level on top; of course it is not as good to concentrate the rays of the sun, but the sun shines so hot here that it acts like a charm as it is. The sash is fastened on with hinges at the back, and in front is fastened with two brass hooks. It was made nine miles from home or I should have had it made exactly according to instructions. I wish now to thank Mr. D. for giving the instructions how to have one made. One other convenience I will mention, that I have added to my apiary this spring, and I am through; that is, the beekeepers' staff; just have one made and be convinced.

Salado, Bell Co., Texas.

June 7, 1887.

For the American Apiculturist.

THE HONEY SEASON IN KENTUCKY.

G. W. DEMAREE.

The honey season in Kentucky has been below the average. In many locations no surplus has been taken, while in other places the bees have done better and a small crop of surplus has been secured. Never *before* has it been better demonstrated that a full and complete *outfit* for apiary work is the only sure way of escaping a total failure in such a season as the present one. The season was so unpropitious that it was out of the question to have comb honey stored in my locality. I discovered this in time to put on cases with empty combs and in this way secured *some* surplus. Although I had a No. 1 outfit for comb honey, and commenced the season with the hope of taking comb honey largely, the season would have been a total failure to me without a good stock of ready built combs on hand. After adjusting on the hives a number of section cases and leaving them in position long enough to see that bees could not, or would not, build combs or draw out foundation, the section cases were raised and cases of empty combs were put under them and from thirty to fifty

pounds of honey was taken from the best colonies; though the season was so slow and poor that bees refused to build combs in the section. How powerfully this experience illustrates the folly of relying on a system that recommends *starters only* in brood combs! In a good season bees will build combs with dispatch and profit, but in a poor season it is a waste of time to undertake to succeed without empty combs, or at least with full sheets of foundation. With strong colonies of Italian bees and a full outfit of ready built combs the season must be poor indeed if I fail to get honey in paying quantities, though I may be unable to secure comb honey at all without partly filled sections brought over from the previous season. The honey crop in Kentucky in 1887 will not be one-fourth of the average year. And of comb honey there will be the smallest crop ever produced in our season since the advent of movable frames. Some favored localities have given some comb honey, but they are few and wide between. Many apiarists who had only a comb honey OUTFIT have lost the season entirely. Swarming was very light. The increase will not exceed ten per cent. There will be no mighty complaint about a "glutted honey market" this year, and that august assembly, that proposes to legislate on questions of "too much" honey this fall, may turn its attention to "patent bee gums" and "sich." The honey crop will not be forthcoming.

WONDERS NEVER CEASE.

The present season I have had a queen mated that was born with a deformed wing. It was a physical impossibility for her to fly. Still she was mated in some way, and is fairly prolific. These exceptional cases indicate that a plan to have queens mated in confinement may yet be discovered.

FERTILE LAYERS, WHAT ARE THEY?

Some years ago some writer suggested that the "balling" process, might have something to do with fertile layers. Some observations of late have caused me to suspect that worker bees are prepared to lay eggs by the balling and sweating process. Time and observation may prove this to be true.

Christiansburg, Ky.

A PLEA FOR THE BEES.

J. M. HICKS.

In many experiments and tests I have made during the last fifteen years at this my home apiary (which I will state consists of about seven and a half acres of ground, and a bee-house 100 ft. long in which I keep my bees on a platform properly constructed for the stands, so that the bees can at all times in the working season go and return at will, and as a means of protection from the forenoon sun), I have arranged grape vines properly planted fifteen feet apart at each front post, so they are thus supported and branch out each way on the front of said bee-house furnishing a magnificent shade for the hives, as well as raising plenty of the finest of grapes each year, which are often left remaining on the vines quite late in the fall; and not a grape have I ever discovered as yet being destroyed by the bees, although some seasons have been very unpropitious for honey causing me to feed several stocks, quite short in stores for their winter supply. Not a grape have I ever noticed being punctured or harmed by the bees, although many times the vines would hang very near the

hives with plenty of the ripe fruit on them. This howl against the bees harming ripe grapes must surely come from those who are not posted, or by those who through some irate principle of natural hatred have concluded to make war on the bees. It seems to me that any fair-minded and unprejudiced fruit grower, who would take the time and pains to investigate the subject as he should, could without much difficulty learn the facts as stated above and not condemn and charge the honey bee with such false proclivities as being guilty of destroying fruits of any kind while growing or ripening on the vines or trees; while, on the other hand, there is plenty of proof in favor of the bees, as being of great value in bringing about proper and much needed fertilization in many of the finest grown fruits of all parts of the United States, as well as in all Europe, it has been practically demonstrated that bees are of great use and benefit in bringing about a proper fertilization in many of the fruits and berries grown, which could not be successfully matured without the aid of the honey bees. Let us hear from the opposing parties with such facts as are true, and not hearsay evidence which is not good in court, nor will not be admissible. More anon.

Battle Ground, Ind.

For the American Apiculturist.

ALLEY'S QUEEN AND DRONE-TRAPS.

DR. C. C. MILLER.

I have never seen any very full description of the workings of the queen and drone-trap. This year I have been trying them. I don't know that they serve their purpose any better for being neatly made, but I confess I admire the workmanship of these traps. This season having been one of utter failure of the honey harvest I have not been able to try them to the fullest extent, but will tell what I know.

When first put on a hive, the workers show some little excitement at the hindrance to their usual free passage; soon they become accustomed to passing through the perforated zinc, and mind it little. Sometimes they get into the upper part of the trap and are annoyed by not being able to get out through the wire-cloth not having sense enough to go at once to the perforated zinc above, where they can easily get out. As a trapper of drones the success is perfect. Of course it is better to have all worker comb in a hive and raise no drones only where they are wanted, but with the utmost vigilance some drones will be raised.

The bees will build drone cells in out-of-the-way places. If you are not careful, mice will make holes in combs in the hive in winter to be filled up with drone comb; and, if given all worker foundation, some of it will be sometimes changed to drone, so that after all some drones are apt to be present and I cannot imagine any better way to get rid of such, than by means of this drone-trap. On coming out of the hive, the drones are not long in finding their way up through the cone into the upper part of the trap and then they are out of the way of the workers' full passage. The trouble is that the beekeeper must empty the trap every few days or the dead bodies of the drones raise a bad stench. If he does not object to the labor, the tin slide might be taken out each day after swarming time is

over for the day, letting the drones come out themselves. Or, if there is no danger of swarming, or if he does not care to catch the queen in case they do swarm, the tin slide could be left out altogether and then you have perfection in the way of destroying drones, providing there are no other hives without traps where the drones may be allowed to enter.

I was most anxious to try the traps as queen-traps, but although I had them on six of my strongest colonies, never a swarm issued, owing to the extreme drought. I had about four inches of the south end of the trap covered with thin board, according to Mr. Alley's instruction, so that if a queen was caught she would be in the shade. It is a pretty clear case that if a swarm issued, the queen would be caught, the same as the drones, in the trap. For those who cannot be with their bees in the middle of the day this ought to work like a charm, and perhaps it would work just as well if the bees were unseen for several days. If, however, the trap should be left on till a young queen hatches there might be trouble in the camp. I do not like to have so little ventilation as the trap allows. That might be remedied by having ventilating space at the entrance or elsewhere covered with perforated zinc.

I do not fully understand the object of the hole that, when unclosed, allows passage from the upper to the lower part of the trap. I have kept mine closed not knowing of what use it could be open. Will Mr. Alley tell us about this?

Marengo, Ill.

[Directions for using the traps are sent with each one, but in Doctor Miller's case we think none were sent. Concerning the object of the hole which Doctor Miller does not understand, we quote the following from the directions:

"If you examine the trap, you will notice a small hole at one end of the division-board. This is provided, so the queen can return to the hive in case a colony swarms during the absence of the bee-master. If swarming is desired, a nail should be pushed in through the side of the trap, thus closing the aperture and preventing the queen from going out. A nail is sent with each trap for this purpose."

The directions also say:

"If the trap does not quite cover the entrance, close the open part by nailing a piece of wood or perforated zinc over it. The entrance to the hive should be as long as the opening in the trap and not less than half an inch high."

When the directions are followed the hive will be amply ventilated and there will be no trouble about the trap working satisfactorily in ninety-nine cases out of one hundred."

Here let me say to those who use the traps that the opening in the small end of the cone tube through which the bees pass into the trap should be about three-eighths of an inch in diameter. It is easily and quickly enlarged by anything that is sufficiently small at one end to enter the tube. I use the butt end of a bit of any size, which is the handiest thing I know of.

When large numbers of drones are trapped they should be cleaned out. Early in the morning is the best time for that work.

About five hundred new customers have the trap in use this year. We invite reports from all as to how it works.]

THE NATIONAL BEEKEEPERS' UNION.

The following is an extract from the report of General Manager, Thos. G. Newman, Editor of the "Am. Bee Journal."

CALIFORNIA FRUIT-BEES TROUBLE.

The Bohn case, mentioned in my last report, was appealed to the Superior Court. The decision there given was on technicalities, and practically ended the difficulties. The expenses of the suit and appeal amounted to $384.50; of this the Union has paid one-half, and Mr. Bohn the other half.

In this case the resistance of the Beekeepers' Union was too much for the fruit-growers — and that trouble, which was proclaimed by a Nebraska apiarist to be "too much for the Union to compete with," is now all conquered! the raisin-growers admitting that they were in error!

Foolish warfare against bees seems to be the rage! The idea that fruit suffers because of the presence of bees is simply ridiculous! The good they do in fertilizing the fruit trees far outweighs any possible evil that may follow from their presence.

THAT SCIENTIFIC PLEASANTRY.

Dr. J. H. Kellogg, of Battle Creek, Mich., in his book entitled "Good Health," had reiterated the Wiley *lie* about the manufacture of combs from paraffine, and filling them with glucose, capping them by machinery, etc. The manager of the Union wrote to him concerning the matter, and asked for a retraction. Dr. K. replied, thanking the manager for calling attention to the error, promising to correct the plates of his book, and by every means in his power to counteract the influence of the false statement, which he had copied from Prof. Wiley. He retracted the matter in his paper entitled *Good Health*, for August, 1886.

The *wily* part played by the originator of that so called "scientific pleasantry," will cause his name to be execrated by honest persons all the world over. And if he should live a thousand years, and devote all his remaining life to atone for the damages he has already done to an honest pursuit, he would die an infinite debtor to it; for the multiplying tongue of slander and falsehood never can be controlled or made to cease its villanous calumnies! His name will

. . . . "go down
To the vile dust from whence he sprung,
Unwept, unhonored, and unsung."

REMOVAL OF BEES FROM CITIES AND VILLAGES.

M. Darling, of Waterbury, Conn., was sued for $500 damages by a neighbor, and to compel the removal of his bees. The case was instigated by malice and jealousy, and was dismissed as soon as it was discovered that he was "backed up" by the National Beekeepers' Union! The expenses were $50, of which the Union paid one-half.

S. W. Rich, of Hobart, N. Y., was sued by a jealous and disagreeable neighbor for $1,500 damages, and also to compel him to move his apiary outside the city limits. This suit is defended by the Union, and is as yet undecided!

C. C. Richardson, a gardener, was sued for keeping honey bees on his land in Tipton, Ind., alleging that they were a nuisance. This was also defended by the Union, and as a result, it was dismissed by the court. The costs were $20; and one-half of it was paid by the Union. This is the "case" which was so badly *misrepresented* at the Indianapolis convention, by an officious neighbor, and it is with *much satisfaction* that I am now able to say that the "Union" was "too much" for the enemies of the pursuit of beekeeping!

The city council of Fort Wayne, Ind., passed an ordinance against keeping bees within the city limits. If enforced, it would practically wipe out the pursuit of beekeeping there. Such a pressure was brought to bear by the beekeepers, backed up by the Union, that the ordinance is a dead letter, and it is expected that it will soon be repealed, if it has not already been done.

In Arkadelphia, Ark., the city council ordered Z. A. Clark to remove his bees from within the city limits within thirty days. Major J. L. Witherspoon, ex-attorney general of Arkansas (who stands at the head of the bar of the state), was employed to attend to the matter on behalf of the bees. The National Beekeepers' Union backs up Mr. Z. A. Clark to fight the case on its merits.

The thirty days have expired, and the bees are still there. Public opinion is strong against their removal, and the newspapers are teeming with ridicule of the order to remove them.

The Union will stand by Mr. Clark in this matter, and see it through, for it would be very detrimental to the pursuit to allow a decision against beekeeping to be put upon record on the plea of its being a "nuisance."

PROPOSED LEGISLATION IN MICHIGAN AGAINST BEEKEEPING.

The McCormick bill introduced into the Legislature, intending to "wipe apiculture out of Michigan," as Prof. Cook stated it, raised such a buzzing about his ears that it was tabled on his own motion, *and there died.* The President of the Union (Mr. Heddon), as well as Vice President Cook and the General Manager all labored with Mr. McCormick to bring about the before mentioned result.

Here we have another result of the benefits to be derived from organization and combined effort. The members of the Beekeepers' Union have many triumphs to feel proud over, and this adds another laurel.

FINANCIAL STATEMENT FOR THE 2 YEARS.

From July 1, 1885 to June 30, 1887.

From 620 memberships at $1.25 each,		$775.00
Paid S. I. Freeborn's suit....	$131.00	
Paid G. Bohn's suit.....	192.25	
Paid M. Darling's suit.....	25 00	
Paid C. C. Richardson's suit..	10 00	
Printing, stamps, stationery, etc.	192.50	
		$550.75
Defence Fund—*Cr.*..	$261.25	
General Fund—*Dr.*.....	37.00	
Balance on hand July 1, 1887.....		$224.25

For the American Apiculturist.

INTRODUCING QUEENS.

DR. C. C. MILLER.

In my haste I overlooked your request for my way of introducing. The first is Simmins' method but I used it long before I ever heard of Simmins.

If I want to introduce a queen from a nucleus or colony into another nucleus or colony, I simply take the frame containing the queen, bees, brood and all, and put it in the desired colony. I am not sure that this would work at all seasons, but I generally do it when honey is yielding and am not particular about how long the colony has been queenless.

If I want to introduce the queen with no other bees, I wait till the colony shows its appreciation of the situation by having started queen cells, then take out a frame of brood, place the queen upon the brood and put it at once in the hive. This plan rarely fails.

Marengo, Ill.

BY G. W. DEMAREE.

I have tried almost every method that has been given to the public in the past ten years, which promised to make the introduction of queens to strange colonies a uniform success. I have been a breeder of fine bees for a number of years past, and have had ample opportunity to satisfy myself that there is no infallible way to introduce. The conditions are not always the same, and this makes uniformity of results out of the question. Still queens can be introduced with as much certainty as is common to good judgment and skill in any difficult performance in manual labor. I lay down the proposition, that no plan will succeed so uniformly as the one that is under the immediate control and observation of the skilled apiarist. To attempt to introduce in any other way is simply to guess at it, *i. e.*, take the chances, and I

am not willing to risk my property interest in that way.

I introduce my queens on top of the frames caged, and arranged so that I can raise the quilt and observe the action of the workers towards the queen. If they cluster about the cage with raised wings and make a hissing sound I just leave them to vent their wrath all alone, and when they quiet down and move about the cage in a listless way, as though a queen was doing duty among them, I know the queen can be safely liberated. I now remove the stopper to the food department, and leave the bees to remove the soft candy and receive the queen among them when the bees are alone and undisturbed. The secret is told in a few words: *reconciliation* to the queen, and her reception when the bees are all alone and not excited from any cause. I make all my cages suitable for this method of introducing, but any cage will answer, if the bees can liberate the queen at the will of the apiarist, by eating out a plug of soft candy, and thus opening her prison door.

Christiansburg, Ky.

QUERIES.

Answers by Practical Apiarists.

PACKING HIVES FOR WINTER.

Query No. 28. 1. Is packing with chaff or other dry material really necessary during the winter in hives that have double-walls? 2. Does not the packing absorb and retain moisture, thus keeping the hive cold and damp all the time? 3. Would it not be better to leave the space between the outer and inner hives unpacked till the first of April and then pack and cover all up warm in order to retain the animal heat generated by the bees?

J. D. D.

ANSWERS BY JAMES HEDDON.

1. Yes.

2. No, not if the packing is properly protected.

3. No, sir.

ANSWERS BY R. L. TAYLOR.

1. Yes, in order to secure the greatest success.

2. Yes, if the packing is improperly done.

3. No.

ANSWERS BY DR. G. L. TINKER.

1. I think it is.

2. The moisture is driven to the top of the packing which is usually damp or wet. The covers of chaff-hives should be taken off on pleasant days in winter.

3. It is better to pack the hives in the fall, in all cases of out-door wintering in double-walled hives.

ANSWERS BY G. W. DEMAREE.

1. It would depend on the climate I should think.

2. The packing would not make a chaff-hive any worse than it is. It is a mean thing any way and could not be made worse. I would prefer a single-walled hive, though it required a little more labor to protect it by "packing" in the winter months.

ANSWERS BY P. R. RUSSELL.

1. Packing is a benefit in double-wall hives, but they will usually winter without it all right. But I think I would have at least a good chaff-cushion or its equivalent on top of frames.

2. If the hive does not absorb dampness from without, through imperfect construction, there will be no dampness to do any harm. The packing becomes useless or harmful in proportion to the moisture it contains.

3. I should prefer to pack them in the fall, but would pack them in April rather than not at all. Doubtless the protection it affords is more valuable in spring as breeding advances.

ANSWERS BY WILL. M. KELLOGG.

1. Yes, I think so; at least I have not had good success leaving them unpacked.

2. No, it absorbs and allows to pass off moisture. My chaff-hives are never wet anywhere, except about one inch deep of chaff on top where the escaping moisture comes in contact with cold air.

3. No; that means disturbing and fussing with bees at a time when it does the most harm. Pack in the latter part of September and let them alone till time to put on sections. I aim to retain all that "animal heat" all winter to keep the hive dry and save honey.

ANSWERS BY J. E. POND.

1. I have a double-walled "Alley L-Hive," with one inch dead air space all around, that has been in use for fifteen years, during which time it was never packed, and I have never lost a colony from it, though I always winter on summer stands.

2. If a hive is properly made and packed, it will not absorb and retain moisture, consequently will not keep it cold and damp. The double-wall hive with dead-air space is preferred by myself, and I think the novice will find it more satisfactory than a chaff hive as it is ordinarily constructed.

3. Concerning the first part of the question authorities differ, but one thing is certain sure, the colony must be so covered as to retain heat in late winter and early spring in order that brood-rearing may be carried forward rapidly. The objection I have to chaff-hives is, that it requires an immense amount of external heat to warm them up so that the bees can take a cleansing flight, if the weather in mid-winter is such that they can safely do so.

HOLYLAND AND PALESTINE BEES. BEST WIDTH OF SECTIONS.

Query No. 29. 1. Are Holyland, Palestine, and Syrian each a different race of bees, or are they all different names of the same race?

2. What is the best width for section boxes?

E. B. S.

ANSWERS BY DR. TINKER.

1. The bees of the Orient differ somewhat according to locality but they all have the same general characteristics. They do not breed strictly to a type and I am very sure have a trace of black blood. The theory that they were descendants of Egyptian bees originally, slightly mixed with the blacks, is entitled to a respectful consideration. The names Holyland, Palestine and Syrian are practically of the same race but from different localities.

2. The best width for section boxes is one and seven-eighths inches, and I have tested every width from one and three-eighths up to two inches. The narrow sections are open to the serious objection that unless placed over very deep brood frames, they are sure to be made depositories for pollen. Being about the thickness of the brood combs the bees store pollen in them in view of the possibilities for brood rearing in them.

SUGAR STORES. HIVING SWARMS.

Query No. 30. A writer in the April issue of the API says in substance: "To get sugar stores ready for use in wintering bees, select colonies at the beginning of the summer dearth, reduce the brood-chamber to five frames and then give each empty combs, and syrup as fast as the bees will appropriate it." Will such feeding have a tendency to make the bees lazy or indolent?

2. Which is the best way to hive swarms if comb honey is wanted; on empty frames, empty combs or foundation, or on frames with starter?

G. P. SMITH.

ANSWERS BY R. L. TAYLOR.

No, at least not more than would the gathering of a like quantity of sweets from the fields. Bees always become apparently less active when their hive becomes largely

filled with honey so that a large amount of capping requires to be done. The quiet necessary to secrete the wax requisite for the cappings and the time required for the work causes the seeming inactivity. Removing the combs when filled and capping begun and supplying more empty combs will disclose the fact that the zeal of the bees is undiminished.

2. I don't know; but I "guess" on frames with starters. I practise this method in the main, and think at least as much surplus is obtained as in any other way, with the advantage of the saving in foundation; but the combs thus produced are not always so straight and sometimes have too large a proportion of cells of drone size. I am inclined to think that a swarm is less likely to desert its hive if frames with starters are used instead of frames filled with foundation. The only advantage I see in frames filled with foundation is that the combs resulting are always perfect. I suspect that empty combs if restricted to the capacity of five L. frames and given to a swarm having a *vigorous queen* would answer nearly or quite as well if the colony is otherwise properly managed. I should advise one having spare combs to use them with swarms having such queens.

I should never use empty frames without starters or a good substitute for them.

A BATCH OF QUESTIONS.

ANSWERS BY THE MANAGER.

Eureka, Ill., June 15, 1887.

HENRY ALLEY, ESQ.

Dear Sir: I find four of my colonies out of eighty are diseased; have foul brood. The disease is evidently in its incipiency, but of course will in time spread. Neither of the four colonies, so far as can be seen by my apiarist, Mr. Frank Curl, has to exceed six diseased cells. Is there anything I can do but to run them this summer and then destroy them? I don't want to trouble you, but if you can give any profitable advice, I assure you I shall appreciate it.

S. W. LAKIN.

[If but four colonies are infected, we certainly advise cremation as the best, speediest and most effective remedy. Don't spend time trying to cure it, as not one case of genuine foul brood was ever cured. Mr. A. I. Root has been trying a long time to rid his apiary of this disease, but he never can do it, except by the above plan.

Some twenty years ago, Mr. C. B. Cotton of West Gorham, Maine, husband of the illustrious Lizzie Cotton, sold us some bees. When they came, we found them badly diseased by foul brood. Well, an attempt was made to cure it. The result was when fall came that every colony in my yard was diseased, and badly diseased, too. As my apiary was not very extensive at that time, I made a bonfire of hives, bees, combs and all; in fact, everything that was used in my apiary that year was converted into ashes. This is the way, my friend, to get rid of foul brood. This plan is being generally adopted; and, as a remedy, should be applied by all who are so unfortunate as to be troubled by this worst of all bee diseases.

I "went for" Cotton for sending me the vile disease. Soon thereafter his advertisement was dropped and that of his wife appeared. I am inclined to think Cotton is yet at the head of that firm.]

Woodstock, Va.

MR. ALLEY:

Do bees gather honey and pollen from the same flowers at the same time?

N. WISMAN.

[Yes, while they are sucking the nectar from the flowers the pollen seems to cover their bodies. It is then worked into pellets on the bees' legs and taken to the hives.]

Cross River, N. Y.

MR. ALLEY:

Dear Sir:

I wish you would answer through the API whether it is common for a queen to stop laying two or three weeks and then go on all night afterwards; also if anything but old age or injury (including chill) will stop a queen laying.

G. H. CHURCHILL.

[A queen seldom ceases to lay from March to Sept. 25. In your case, it is my opinion that the bees superseded an old queen. Unless nearly frozen, a queen would not be injured by a chill.]

Hunters Land, N. Y.

MR. ALLEY:

Please answer the following questions in the AMERICAN APICULTURIST.

1. What is the best breed of bees?

2. What is the best bee hive?

A. DINGS.

[1. The Italians by all odds.

2. Best bee-hive is the one that suits the beekeeper best. I cannot say which of the thousand and one different styles would be most likely to suit you.]

Glenbrook, N. S. W.,
May 25, 1887.

MR. HENRY ALLEY.

DEAR SIR:

Will you kindly answer the enclosed through your journal.

What is the proper way to mix food for shipping bees? In most cases the food becomes liquid and runs all over the case. How can this be prevented?

MAJOR A. SHALLARD.

[Take five pounds of pulverized (not powdered) sugar and add to it one pound of the best quality honey. Then knead it the same as a *good* bread-maker does her dough for bread. Add sugar enough to keep it from sticking to the hands. When you have worked and kneaded it an hour and call it done, just knead it half an hour longer. The more it is kneaded the less it is liable to soften or to become sticky during damp weather.]

Prairie du Chien, Wis.

HENRY ALLEY.

DEAR SIR: Please find ten cents for the June number of your valuable journal. I wish to be posted in the kind of work of which the June number treats.

I was a Bay State boy raised in Franklin county.

[It will be noticed that there is no name signed to the above. We print it as it is only a sample of many such letters which come to hand during the year. This Bay State boy is probably telling his friends that the manager of the API has cheated him out of ten cents. Please be more careful in signing your name and full address.]

Late last fall I purchased a swarm of bees with a fair quantity of bees. I packed them for winter on summer stands; on opening them early this spring, I found plenty of honey, bees all dead, with but very few in or about the hive. What was the cause of their death and especially of their disappearance?

SUBSCRIBER.

[Should say the colony lost its queen last fall and the bees gradually died of some disease developed during the winter. Perhaps honey-dew had something to do with it. Lots of beekeepers were troubled the same way last winter.]

Rochester, N. Y.

MR. ALLEY:

If brood is chilled when transferring, or from any other cause should not hatch when the proper time arrives, will the bees take care of it, or should it be removed from the hive?

W. G. TOWER.

[The weather is not cold enough at any time when bees should be transferred to chill the brood. Capped brood will not chill nor die in the cells unless the temperature is below 50° and the brood exposed for twenty-four hours. People have a queer idea about brood chilling. The combs may remain out of the hive several hours, even at a tem-

perature of 50°, and the brood not damaged. Some of the large uncapped brood would die and work out of the cells, but the smaller larva and eggs would not be damaged in the least.

All unhealthy brood will be promptly removed by the bees, but then if there is any such brood in the combs they should be removed.]

The American Apiculturist.

Published Monthly.

HENRY ALLEY,
MANAGER,
WENHAM, MASS.

TERMS: $1.00 PER YEAR.
SEE INDUCEMENTS TO SUBSCRIBERS.
Wenham, Mass, Aug. 1, 1887.

THE MANAGER'S CORNER.

Mr. Ivas S. Young of Christiana, Norway, has written us that he would like to visit our apiary when he comes to America. Of course we extended to him a most cordial invitation to do so. Mr. Young expects to be here in August, and if he has any new points on beekeeping we shall try to draw them out.

By the way, this reminds us that Mr. Young has published a bee book, though we have not seen a copy, and could not read one word of it if one had been sent us, as the work is printed in the Norwegian language. We did notice Mr. Root's criticisms of the work. Mr. Root cannot read it, but he saw therein an illustration of a smoker for burning tobacco. Mr. Root does not like tobacco and so he just went for that smoker and author.

Well, if Mr. Root does not like tobacco he has the privilege of letting it alone. If his neighbor wants to use it it is none of Mr. Root's business or concern.

We have a pipe in which to burn tobacco which has been used in our apiary every year since we began beekeeping. This pipe is one of the most useful instruments and most used of any we have. From May 1 to Oct. 15, this pipe comes into play several times each day, yet we never use tobacco in any other way. When the bee season is over the pipe is laid away till the coming spring.

Every time a queen is introduced the pipe is used. With the use of this wonderful instrument, we can introduce one hundred queens in one hour. To introduce an equal number of queens by any other method would require a a whole day; then again, by using the pipe and tobacco, not one queen is lost in introducing, even though a new queen is introduced the moment another is removed.

People with extreme notions about tobacco and intoxicating drinks are pretty apt to be inconsistent on these points. So far as temperance is concerned, I am quite sure Mr. Root and myself would agree.

The reader will please excuse the rambling ideas as expressed in the above item; they seem to come in place here.

Cheap-made Goods.—A friend who lives in the Canadian dominion gave us a call the other day. He said he purchased a Heddon hive of a well known manufacturer in Canada and it was the "meanest made up thing" he ever saw. Mr. Heddon has a patent claim on just a bee space between the two sets of frames. The hive above alluded to could not be considered an infringement of Mr. Heddon's as the space that ought to have been not over $\frac{3}{16}$ of an inch was $\frac{3}{4}$ of an inch. We would like to see those hives separated when bees have been in them one season.

I cautioned Mr. Heddon against letting Bob, Dick and Harry manufacture his hives, as not one man in five who advertises such things for sale at a low figure will make an article that will be any credit to the manufacturer. How can a man make a hive that is worth $4 for about half that sum?

The craze for cheap goods, and a desire of everybody who manufactures supplies to furnish them as cheap as the man who sells a carload every day, have brought us to this state of affairs.

The only remedy is to send your orders to some one who will furnish a good article at a fair price.

Perhaps we ought not to say that the friend spoken of above said he

liked the Bay State hive the best, nevertheless he so expresses himself. We have so improved the construction of the Bay State Reversible hive that they can be sold for about $3 for a single one, the coming season.

Perforated Zinc. — Dr. G. L. Tinker has certainly succeeded in making perforated metal that is as near perfect as can be. We have some of it on several drone and queen-traps, and have watched the bees as they pass through it. They do so with perfect ease; and the metal does not seem to obstruct the entrance in the least.

This perforated metal is different from any other in several important points. The slots are longer than those in any other that we have used. The lines between the perforations are very narrow which not only provides more passage room for the bees to pass out and in, but much better ventilation, also. Nor does the zinc have that rough edge on one side as most metal of this kind does, caused by the dies when the slots are made.

In order to get suitable perforated zinc for his celebrated honey-boards, Dr. Tinker found that he must manufacture that article himself. The price of this metal is about the same as it is sold for by other manufacturers.

Supersede old Queens.—If a colony has a queen two years old, it is good policy to remove her and introduce a young one. An old queen may give out during the winter, or early in the spring. In either case, it would be ruinous to the colony unless the fact could be known and a new queen procured before April 1.

It is rather difficult to introduce a queen to a colony that has been queenless from six to eight weeks, as fertile workers get possession by that time, and if the queen is accepted, the fertile worker bees continue to fill the cells with eggs, thus interfering greatly with the rearing of brood.

When fertile workers have once obobtained possession of the brood combs, a queen should not be introduced. The better plan is to destroy all the bees and later in the season use the combs for a new swarm.

A few days ago we read a long article in an exchange "How to get rid of fertile workers." It is nonsense to write about such matters, as everybody who has kept bees knows that a few quarts of *old* bees are as worthless as so many grains of sand.

Prepare for Winter.—Early in August is the time to prepare bees for winter. The hives need not be packed, but see to it that each colony has a good fertile queen and that the food is in full supply. Colonies short of stores at this season should be fed a sufficient amount of syrup to keep up breeding, as it is the bees that are hatched between August 10 and Oct. 10, that will compose the colony during the winter. Early in September every colony that has not stores sufficient to carry them through the winter should be supplied, either from the fall flowers or by a feeder.

Do not feed much in October, as then the bees should be at rest, which is one of the most important conditions necessary to successful wintering. The less bees are disturbed from Oct. 1 to April 10, the better.

Behind the Times.—The July issue of the American Agriculturist contains an article on "Transferring Bees." Any experienced beekeeper will notice that the author of that article is behind the times. The use of sticks, pieces of tin and wire in fastening combs in frames is an old time arrangement.

If a great publication like the American Agriculturist cannot afford to employ competent persons as teachers in bee culture, it ought to drop "Bee-Notes" altogether. Think it would be a good idea for that publication to again employ Mr. L. C. Root.

National Beekeepers' Union.—The report of the general manager of the National Beekeeper's Union has been received. We have on several occasions called attention to the importance of every beekeeper becoming a member of this organization. The report of Manager Newman seems sufficient to convince all who keep bees that they are liable to be prosecuted.—perhaps persecuted is the more proper term to use—at any time. A man with plenty of means can stand the expense of a lawsuit, a poor man cannot; hence the necessity of joining the Union. Manager Newman can supply the proper papers.

The Honey Crop of 1887.—Early in July we addressed cards to a large number of prominent honey producers inquiring what the prospect was of a crop of honey the present season. Most of those to whom these cards were addressed answered promptly, and what they say may be found elsewhere in this issue of the API.

As is usually the case, there are locations where no honey was gathered, and in other places an average crop was stored.

That the crop will be far below the average for several years past is evident from the reports received.

The rains that have visited nearly all parts of the country since June 25, will most likely do much towards a fairly good fall harvest, though the honey gathered late in the season is of an inferior quality.

Don't get discouraged, friends, as these off-years do not come very often. The beekeeper will most certainly get good returns for his labor four years out of five.

The Honey Market Reports will be given in the September issue of the Api, which will be mailed August 25. Of course good honey has been scarce for several months, but prices have not been quoted. By Sept. 1, the new crop of honey will be ready to ship, then quotations will be in order.

The supply Trade.—The season just ended has been a busy one for all supply dealers. At this date we have not an unfilled order on our book for goods of any kind.

We have fine queens in abundance and can fill an order for most any number promptly.

All who Subscribe for the APICULTURIST, at any time, will receive one of our combined Drone and Queen-traps free by mail. This is our method of introducing the APICULTURIST and our Drone and Queen-traps into every apiary in the United States.

Those who receive the trap as a premium must not expect to get the Handy Book or a queen for fifty cents, as the profits are so small that only one premium can be given each subscriber.

Our Club Rates.

Am. Apiculturist and Am. Weekly Bee Journal,	$1.80
Am. "Api" and Gleanings (semi-monthly)	1.90
" " " Bee Hive (bi-monthly)	1.00
" " " Beekeepers' Handy Book	1.50
" " " Cook's Manual	1.70
" " " A Year among the Bees	1.50
" " " Alley's drone and queen trap	1.00

GLEANINGS FROM CORRESPONDENCE.

Providence, R. I., July 7, 1887.

MR. ALLEY.

Dear Sir:

We bought last July a hive of Italian bees and kept them nicely through the winter. Last week an immense swarm came off, lighted on a tree in a neighboring yard for a while, then sailed off to a second and a third tree, each one farther off and more lofty than the last. I know where they are now; but the lady who bravely hived them — in an old tea box — claims them. I suppose she has nine points of the law, so I must make her welcome to them. It was a disappointment to my little boy who is much interested in the little creatures. I was ill at the time, but had I been able to pursue them the result would probably have been the same. I had never heard of a queen-trap until a day or two since I chanced upon a copy of the AMERICAN APICULTURIST.

MRS. G. A. SHATTUCK.

[Yes, the person who hived the bees has nine points of the law and nine points of downright meanness and dishonesty by not giving the bees up. We don't care to say that under the circumstances it is stealing to keep the bees, but then it is the next thing to it.

Had you had a drone-trap on the hive the bees never would have left your yard.]

Hopkins, Mo., July 1, 1887.

DEAR API: July number is at hand; I, too, like Mr. J. M. Shuck, want to speak the appreciation I feel for the June number. I am partial to Mr. Doolittle, for his article and all his writings, for my hive and plans are so much like his. Mr. Shuck's criticism of Mr. Manum I cannot indorse. I have read the article and am using his plan on new swarms without trouble. I tell my neighbors the June number is worth $5 to any one having bees. J. H. Martin said "do you know of one

who raises honey for a business?" Yes, I do know of seven in New York who do, and a day's drive will take you to all of them. I shall be satisfied to make as much as they do.

Swarming has begun in earnest. I can manage all the crooks and turns with a degree of satisfaction except swarming. I have no trees for them to cluster on and think trees are a necessity in handling eight and ten swarms a day. I clip my queens, use a swarming box, pole, etc., but seven out of ten will return to the hive whence they came. We had a drought all through clover till now we are having a good long rain. This made swarming too late. I should have divided on clover but the drought made things look gloomy.

I am trying the plan of hiving No. 2 in No. 1 sent me by Mr. Kretchmer, of Iowa. Two out of ten, so hived, swarmed in a few days. But by the swarm returning to the old stand, as it is most sure to do, I would carry the hive that cast a swarm and place on the old stand, then hive the swarm and release the queen. The two that re-swarmed were of this kind. I think it works better when the swarms cluster on the queen and then hived in the one that cast a swarm, not moving either hive. I often have two and three swarms cluster together; others dive into a hive that has swarmed. This week one flew three-quarters of an hour before returning. I mean to change my location to one having a wind-break of trees.

No surplus finished on clover. Clover bloomed early, May 20. Linden began blooming June 28th. July 1st, the bees are doing well on it. For four years I have got no honey from linden; this year it is loaded with bloom and may do wonders.

I must take issue with Mr. Pond on the chaff-hive question compared with single-walled hives unless protected as he does, but look at the work necessary to fix up 100 colonies as he does, each year. This alone would soon pay the expense of the chaff-hive, and I think a chaff-hive can be made as good protection as the leaves and dirt he uses. My hive is a one-story chaff packed hive, with one story wide frame, tin separator for surplus. Mr. Alley, why can't one make a business of producing honey if he is the right man and in good location? If I can't do so I will quit, for it is whole loaf or none for me.

J. C. STEWART.

Hopkinsville, Ky.

FRIEND ALLEY: The two copies of the API that you sent me are very acceptable and instructive, though we have no "winter problem" and do not aim to get much comb honey. We are, however, securing more comb honey this season than ever, as the people are becoming accustomed to the nice white sections and will no longer be satisfied with the promiscuous mess so long palmed off as comb honey.

I am rearing a few queens this season to replace some that are past their prime and others that are inferior or mismated. I have a large number of daughters of the queen you sent me two years ago. Some are finer than the mother, some different; but where purely mated the workers are all equally handsome and enterprising. I notice in these bees at times, a nervous trait reminding one of the Holy Land race. I think some of my queens were mated by Holy Land drones but not enough to warrant the supposition that the mother was cross-mated, though there might be trace of such blood. However, I do not wish my bees to be so gentle as to be lazy.

The great abundance of white clover that promised so much has been a failure so far as honey is expected, owing to long-continued dry weather, but since about the first of June the bees have brought immense quantities from red clover and are still booming on the second crop. In July and August the yield from various sources, though moderate, is kept up without intermission and in September and October the fall harvest becomes abundant such as it is. For the first time in three years we shall have a large crop of *white honey* a thing unusual here and unattainable without Italians. I like the plan which you suggest in Handy Book, p. 242, of removing the queen from the hive a few days before shipping, and have myself sometimes done the same where they had a long distance to go. If I remember rightly the queen I had from you two years ago was three days on the way, came all bright and fresh, was *introduced* to a pound or two of bees in a box a few hours after arrival, *a la* Doolittle, remained with them all night, in the morning were put in a hive with two or three brood-combs and all serene.

D. F. SAVAGE.

THE HONEY CROP OF 1887.

REPORTS FROM A LARGE NUMBER OF LOCATIONS.

De Kalb Junction, N. Y.,
July 9, 1887.

FRIEND ALLEY:

It is too early to give a current report of the honey crop, as basswood is in full bloom yet. If we get favorable weather for the next week the crop will be fully one-half what it was two years ago. Last year we got no honey. The weather has been too hot for the last week for the secretion of basswood honey.

Respectfully,
IRA BARBER.

Lapeer, Mich., July 8, 1887.

The early honey crop this season is almost an entire failure. Only the very strong colonies furnish any surplus. White clover yielded but little nectar, and basswood, now nearly past, has done little better. The surplus may average ten pounds per colony. So far as honey is concerned, the season has been unpropitious from the beginning; willow, soft maple, hard maple, and fruit blossoms yielding but scantily. Without a fair fall yield, bees will have to be fed largely to supply stores for winter.

R. L. TAYLOR.

Hartford, N. Y., July 6, 1887.

FRIEND A:

In relation to the honey crop I would report as follows: We have had a moderate but continuous honey flow ever since clover commenced to bloom, and strong swarms have stored a good amount of honey. Basswood has just commenced to blossom and the trees are loaded with flowers. The weather thus far is favorable for the secretion of nectar, and we are hoping for a good yield from this source. The yield will be above the average here.

Swarming has been profuse and I hear of many beekeepers losing swarms by absconding.

J. H. MARTIN.

Hamilton, Hancock Co., Ill., July 9, '87.

The honey crop is a failure. We shall not have 5000 pounds from 400 colonies. Weather dry and no hope of a fall crop.

CHAS. DADANT & SON.

Cincinnati, July 7, 1887.

FRIEND ALLEY: There will be but little honey raised in Ohio, Kentucky, and Indiana. During the month of June white clover blooms in this part of the country and is almost our sole resource for honey. Almost every night was cool from beginning of June to about the 20th. Experience has taught us that no honey is secreted in white clover during day time whenever the thermometer went down to 55° the previous night. It went down to 47° one morning about the middle of the month. Cold nights in June seem to have been the cause of the failure of our honey crop.

I have reports from several friends that the crop is good in the southern states.

For the first time that I know of, my bees failed to make the wonted good use of Alsike clover of which I had a splendid stand.

CHAS. F. MUTH.

Bristol, Vt.,
July 11, 1887.

MR. H. ALLEY.

DEAR SIR:

You ask "what my honey crop will be this year?" I am sorry to say that it will be very light again. For the first time since I have been in the bee business (seventeen years) we have had two poor honey seasons in succession, last year and this, though in May and June the prospects were never more flattering nor were my bees ever in better condition, but a cold and wet June prevented the bees working on raspberry and clover. But as basswood promises to bloom in great abundance we still hope for a partial crop as the bees are nearly through swarming and are in excellent condition to gather honey; but, lo! basswood has been in bloom five days and but very little honey have we got from it yet, and the prospect is that we shall not get much more. It does not seem to secrete honey except in the morning and just at night, as the bees only work on it about three hours in the morning and about two hours at night. I attribute the cause to a lack of electric shocks, and I have noticed for several years past that when we have a good deal of thunder and lightning we get lots of honey; though we have had plenty of rain this year, but have had but very little lightning.

Now, in answer to your question, I have to say that my honey crop will not be over one-eighth of an average crop. I never worked harder in my life to get the bees ready for the harvest and in this I have succeeded better than ever before; hence, I feel that I have done all I could to secure a crop of honey.

Yours, etc.,
A. E. MANUM.

P. S. As far as I have heard from other bee-men around me they are in the same boat as myself.

Oneida, Ill.

FRIEND ALLEY:

In reply to your query, as above, in one word, *nothing*. I have not had a swarm this season nor a pound of honey. Sections that were put on are only worked enough for nice starters for next season, many not even that. One or two stocks have a few sections nearly filled, not one finished. The extracting hives and cases have only been cleaned of sticking honey, broken places mended, and a little honey here and there scattered through. I am putting on all my empty extracting combs now to have them cleaned up and mended, but have to do so late in the evening as bees would rob anything at all exposed.

We may get some fall honey if we have rain enough, but we have endured a long drought, and a heavy shower makes but little impression. I am lucky enough to have nearly a ton of honey on hand from last season to help bridge over a short crop.

W. M. KELLOGG.

Borodino, N. Y., July 7.

No honey except for breeding purposes. As to basswood, which is now opened, bees are doing moderately on it so far. Too early to tell for certain what the crop will be.

G. M. D.

Medina, O., July 8, 1887.

FRIEND ALLEY:

In answer to yours of above date as to what the honey crop will be, we will say that the flow of honey in our locality from white clover has been very light. Basswood, however, has given us a good yield, rather better, perhaps, than usual.

A. I. ROOT.

Chicago, Ill., July 7, 1887.

Dear Sir:

From reports at our command we estimate the white clover and basswood honey at not over one-quarter of the usual crop. The prospects for a "*fall* crop of honey" have materially improved since the late copious rains all over the northwest. Swarming has not exceeded ten per cent.

THOMAS G. NEWMAN & SON.

Oxford, Pa., July 7, 1887.

As to the honey crop in this section I can only answer for myself as my apiary consists of Carniolans entirely and they have brought my honey crop up to an average. The white clover season is usually at an end here about this time, and if it ends now the season will be of only half the usual time.

S. W. MORRISON, M.D.

Des Moines, Iowa, July 8, 1887.

MR. ALLEY:

From the best information I can get, not over one-third of a crop as compared with 1886. Secretion of nectar in this locality has entirely ceased and bees are trying to rob each other.

J. M. SHUCK.

Abronia, Mich., July 7, 1887.

A very light crop of very fine clover and linden honey. Not more than one-fourth the usual yield here. Linden has yielded slowly, fourteen days, an unusual length of time. Still the bees have no day gathered as they sometimes do.

Respectfully, etc.,
T. F. BINGHAM.

Bradford, Vt., July 8, 1887.

FRIEND ALLEY:—Owing to a cold spring, which delayed the white clover, honey has been coming in slowly. There is, however, every indication of a heavy flow from basswood and all looks favorable for a medium crop of honey. All that has been taken off is of a very fine quality.

HILAS D. DAVIS.

Coleraine, Mass.

Honey crop so far has been very good. Basswood yet to come and if weather is favorable expect a large yield.

W. W. CARY.

High Hill, Mo.

Our bees have done very poorly this season. Started with 308 colonies in the spring; have not received a single swarm yet, nor taken one pound of surplus honey. Hives are full with bees and brood but no honey. White clover and basswood did not yield any honey in our locality. We hear of like complaints from all the adjoining counties.

Yours truly,
JNO. NEBEL & SON.

Midland, Mich.

Prospect is good for a crop of honey here.

S. R. BOYD.

The Honey Market. As honey will not be in such abundance the present season, would it not be a good idea to try and work up prices, say about 15% or perhaps 20%.

If one has a quantity of honey for sale, by all means have some leaflets printed instructing people how to use honey, whether for preserving fruit, as a medicine, or to work into confections. Scatter these leaflets everywhere. Get your local papers to publish them. Keep the fact before the people that honey is healthful as well as one of the cheapest luxuries in the market. Have your name and full address on each package, and also in large letters say: "I warrant this package to contain, so much, pure honey." By doing so no one will be afraid to purchase honey, and the person who buys it and finds it good will call for that particular brand everytime.

Don't be afraid to acquaint your friends, neighbors, and all the people within several miles of your apiary that you have honey for sale.

NOTES FROM THE BAY STATE APIARY.

HENRY ALLEY.

SOMETHING ABOUT WHAT ONE MAN CAN DO.

Some of our readers have an idea that we have a large factory and employ lots of men to make up supplies for the trade; such is not the fact, we employ several experienced hands during the winter and keep them at work till about June 10; after which date we manage to do the work alone. This however, we could not do alone, did we not work during the winter months getting every thing in order, so that nothing will be wanting during the busy season.

The principal business going on at the Bay State apiary from June 1 to Oct. 10 is queen-rearing. There are in full operation at this time in our apiary over 260 nuclei and 60 full colonies of bees. We are rearing about 100 queens each week; of this number about 75 queens are shipped to customers in every state in the Union. The work required to rear 100 queens each week is no small affair, as any queen breeder can testify. It is not quite as much work to care for 260 nucleus hive while the bees are gathering honey, but when this number of colonies must be fed as often as twice each week, one can have a faint idea of the work to be done in such an apiary. Every morning one or more colonies of bees are taken into the bee house and every bee removed from the combs and treated according to directions given in the "Handy Book," —preparatory to cell building.

The brood and combs are then placed in the hive again and taken into the beeyard and other bees that have just built and capped a lot of cells from eggs given them but four days previous are shaken from the combs in front of the latter hive, and the queen given them, when all goes on as usual. This same performance is gone through with each day from May 8, or 10, till Aug. 15, after which time no more cells are "started."

OTHER WORK WE HAVE TO DO.

Each day we receive about twenty-five letters and postal cards. All of these have to receive per-

sonal attention at once. These letters do not all relate strictly to business. A large number of questions come to hand by every mail, all of which must be answered personally or through the Api. At any rate we have to answer nearly all of them, and of course it takes time to do it. Let no one think by this that we are not ready and willing to answer all.

Every order received is registered, numbered, and before all is finished the name and full address of each customer have to be written not less than four and some five times. This is necessary in order to keep a straight account. Not only do we attend to all the correspondence, care for 260 nuclei, 60 full colonies, rear and put up for mailing all the queens, address the hundreds of sample copies of Api, but we have the publishing of the Api to attend to each month besides. The reader will notice that we supply several pages of the reading matter each month, as well as make all the blunders in its make-up. Some of you must have noticed one mistake made last month. We refer to the letter of Mr. Trowbridge at the head of Mr. Doolittle's article. Well, we had just four hours' time in which to make the "dummy". As all may not understand what the dummy is we will try and explain. It is made in this way: all the matter in the Api is sent to us on strips of paper, each of which when cut up will fill three columns of the Api. This is called "galley" proof. On these strips all corrections are made on the margin at each side of the reading matter. The manager of the Api is furnished two copies or proofs of each galley: one is to make all needed correction on and is returned to the printer; the other copy is to cut up to make the dummy for a model for the printer to work by. When enough has been cut in strips it is then cut off into pieces one column long and pasted over the columns of another copy of the Api. This part of publishing a journal is not a small job by any means, and if a fellow is in a hurry or does not keep his eyes open he will find when the paper is ready to mail to his subscribers, that several mistakes have been made. It is impossible to get any printed matter perfect. In our great haste to get the July Api out on time, the mistake above referred to was made.

In order that all may know why Mr. D. wrote that most excellent article "Working for Extracted Honey" we have had printed the letter of T. K. to which Mr. D's article is an answer; and a slip containing the same will be found in this number of the Api. Those who care to preserve it can cut it to the proper size and paste it over the letter of Mr. Trowbridge. Had I spent as much time in reading the make-up of the Api as I have in explaining how such a mistake happened it would not have occurred. Please excuse us for doing so, and we will assure the reader that more will occur later as they are sure to do in all publications.

DIFFERENT METHODS FOR REARING QUEENS.

As is natural with us, I have been experimenting more or less this season on the different methods for rearing queens. Have tested five new methods, not one of which is down in the books. I need not say none of them were satisfactory. There is no other method by which one can rear queens that equal those reared under the swarming impulse except the one given in the "Beekeepers' Handy Book."

Wenham, Mass.

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER

VOL. V. WENHAM, MASS., SEPTEMBER 1, 1887. No. 9.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt shipment. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

HYBRIDS OR NOT.

J. E. POND.

THE questions of "What race of bees are the best?" and "Are hybrids better than pure bees?" have been called quite prominently in times past to the attention of the readers of the various bee journals, but there has been a lull upon the subject until quite recently. If it were not for one important point, I myself should give more credence to the expressed ideas of the champions of hybrids, and that point is, that they either are breeders of hybrids themselves under the cloak of a *strain*, or are anxious for some reason or other to boom the hybrid *strains* thus advertised. As a fact, however, the Italian forms the basis on which these wonderful strains are built. In the first place we heard of a strain, built up by crossing the German or black bee with the Italian. This cross it was said produced a bee that was gentle and a first-class honey gatherer. The fact, however, that this strain was not so gotten up that it could be identified by any fixed markings prevented from fear of imposition its general acceptance. Seeing this important point, another breeder of queens started the boom on a so-called Syrio-Italian, claiming that it was not only perfection in possessing the gentleness of the Italian, and the smartness of the Syrian, but it had the distingnishing marks of the yellow races, viz., the three bands.

The argument was then made, "How shall we be able to distinguish this new race from those from which it was built?" and, further, Will the hybrids hold their own or will they by continued crosses go back to their originals? Seeing the importance of these questions, and the bearing they must inevitably have upon the boom being made, it is now attempted to cry down the Italians by saying they are hybrids, that the only pure bees we have are the blacks, and that it makes no real difference which hybrid we adopt, so long as we have good, clever working bees. Now for myself, it is well known that I have for years been a champion of pure Italian bees, and that I have fought for them to the best of my ability. I must say, however, that the Italians need no champion. They have been before the public for more than thirty years, and while they met with the severest opposition on the first attempt at introducing, yet they have won their way to favor against this opposition, till now they are admitted by all disinterested beekeepers of experience to stand at the head and front of them all. This being the

case, is there any legitimate reason, why we should throw them aside? and have we any guaranty that we shall gain by so doing? So far as the attempted argument is concerned that Italians are hybrids, there is no proof whatever to support it, and the only reply that is needed is the simple assertion that statements, not based on proof, are of no value whatever as arguments. I can assert safely, and defy proof to the contrary, that the Italians are the originals of the race of honey bees.

My proof is found in Virgil, who speaks of two races of bees, black and yellow, and who says the yellow are far superior. For twenty years I have tested both the yellow and the black, and the various crosses they are capable of producing. I have found the yellow Italians the superiors every time, and that crossing them injured the strain; and also that crossing the blacks improved them in the ratio of the Italian blood added. I trust that no one will be deceived then by any specious arguments in favor of crossing; and that all will remember they come from parties who advertise such crosses for sale.

Foxboro, Aug. 2, 1887.

For the American Apiculturist.

"INS" AND "OUTS" OF THE APIARY.

LUCY C. CREHORE.

As I find that human nature is more fond of looking at the brighter side of life than at the darker, perhaps it would be better for me to name some of the "ins" first.

Were you to ask me what I thought was the first "in" of my apiary, I should say a lively, prolific strain of bees. Not *too* lively, however, for I should be apt to consider that trait a decided "out." Some novice might inquire, what kind of a hive to use. I should reply, the very best; which is the kind which best suits the manipulator. "Many people have many minds," so, to please all, there are many hives. Another great "in" is the situation of my hives, which are placed facing south.

It is an amusing "in" to accompany the boastful visitor who rebels against the bee veil, into the apiary, and see him make himself suddenly "in"-visible among the bushes. In the course of five minutes he appears from the other side of the house and says, with a triumphant ring in his voice, "Well, I didn't get stung, did I?

I studied beekeeping under two apiarists who are among the best in New England, and the past summer took care of an apiary containing over one hundred colonies. If their (the bees) views and mine had not disagreed, I fully believe they would have increased to five hundred colonies. When cutting out queen cells to prevent afterswarms, I removed from twelve to sixteen queen cells, hatching and nearly ready to hatch, from each; and often, at the same time, found another set started with larva in them.

Certainly I know of no more healthful and profitable employment for ladies than beekeeping, and, if rightly managed it will not interfere with either domestic or intellectual pursuits. A novice might think from reading the "ins" that there were no "outs." Not so, my friend. Take stings, for instance. They are annoying, but as I make quite free use of soft soap (not the verbal kind, however), I am not much affected by them. I know of no severer "out" than, after working patiently and

diligently (as I did the past season) to find the honey crop minus. This year it averages only about twenty pounds per colony. Therefore, I also am among those who mourn, especially as two poor seasons have come in succession. Another "out" is to view with despairing gaze a swarm clustered on the topmost branch of a tall elm or locust. But I find that difficulty may be obviated by clipped queens, and the prevention of afterswarms by cutting out queen-cells. The bees were so delayed in swarming by the rainy weather, that I was obliged to remove queen cells in five days after the issue of the prime swarm, or else find the hive overrun with young queens. If a single cell is skipped you must make up your mind to climb to "supernal heights." The past season, two of the swarms took their "out"-ing in the midst of a heavy rain. Both were first swarms. There was no need of a "fountain-pump" to secure them.

Altogether, we have had a very trying season. I would advise any lady wishing to make a business of beekeeping to spend, at least, one year under the instruction of some practical apiarist.

Bradford, Vt.

For the American Apiculturist.

DIFFICULTIES OF A NOVICE.

Mrs. H. Hills.

It is surprising, it is simply amazing, that one should willingly work as hard as I have this summer, for a matter of a couple of thousand pounds more or less of honey; but there is such a fascination in the work, that one would not give it up, even if not enough for winter stores were secured.

The great trouble seemed to be in getting *comb* honey stored, and much of the difficulty was doubtless due to the light honey flow. I wish we could have had Mr. Demaree's article in the last Api, touching this point, earlier. Probably if the apiary had been worked for extracted honey, exclusively, a much larger crop might have been secured and with far less work.

Again: such heavy colonies as I took from the cellar last spring frighten me. I cannot control them. The little nucleus, on its three crosswise L. frames, wintered so remarkably well, and also built up, and stored so goodly a quantity of extracted honey, that I am strongly tempted to winter more such. I can get these little nucleus hives in and out of the cellar without assistance; and as they build up in the spring, the frames can be removed to larger hives. There is very strong temptation to invest in Heddon hives, one-half story of which would hold just the sized colony I should like to handle. But what could be done with the nice, new crosswise L. hives, and the four crosswise chaff-division boards for each, which form such a perfect two-inch lining of chaff, all around the hive, affording such facilities for contraction of brood-chamber, and spring protection?

What work Mr. Schwartz did make getting my bees out of the cellar last spring. One colony of hybrids, which certainly deserves further mention, stung him to a frightful degree. I thought he would run and leave me, but we finally finished the job, just at noon, and looking up, found Mephisto grinning sarcastically, from the piazza where he stood waiting for his uncooked dinner. He remembered his own experience of last Thanksgiving day, with this same colony, when he, innocently enough, tried to take away their entrance blocks,

preparatory to removing them to the cellar. The colony now inhabits the solitary recesses of Tamarac swamp, but their queen never left the trap alive. What did they do for a queen? Ah! thereby hangs a tale.

Last year at the close of the honey flow, there were forty-one colonies in the apiary, which were doubled up to 31½, with the result that those united were so full of bees in the spring, that,— well, as mentioned above, the Tamarac swamp solved the problem for, at least, some of them. This season I have tried to run the old colonies as nuclei, by the side of the prime swarms, on the double stands. Curiously heavy nuclei they are, though their field bees were repeatedly drawn off, into the primes, by moving them from one side to the other of the latter, *a la Heddon*, or to the back of them,— anywhere, so their field bees should not find them. Think you, that the primes also, were thus made heavy or light, with their half dozen or less stories of extracting frames? These very heavy colonies worked right along, cold or hot, when it rained, even, so long as they were allowed to occupy their *meeting houses*. But what resulted if an attempt was made to contract their brood-chambers, and give section cases? And how about the one thousand lovely three-fourth pound sections received from Dr. Tinker? Such devices, without number, were employed to induce them to fill those sections. No matter how many cases were given, they would either refuse to stay in the hives at all (and this was most usually the case) or otherwise, store about fifty pounds in the sections, and then prepare to swarm. This would never do. Even if I could have put up with it myself, and let them doze along, Mephisto's eyes were everywhere. Each noon he went over the apiary, singling out the delinquents the moment they showed signs of slackening speed; and I had to employ some device to, at least, keep them inside the hives; though it is my private opinion, that, when within, they often loafed all the same. Sometimes the comb honey of a colony, grown lazy, was exchanged for the extracting-frames of one just made up, taking bees along. Sometimes I made up a colony with young queen in the hive from which the prime swarm had issued, and put in place of the prime when that grew slowly; giving the newly prepared colony, all the surplus and returning bees, and taking away the sleepy lower story to be looked over, and stirred up from its lethargy. Giving drone brood, which had been uncapped, always seemed to rouse the very laziest colonies.

Sometimes, when wishing to draw bees from the old colony, to prevent after-swarming, and unable to move the heavy hive, a story of extracting frames was placed above it, and when well covered with bees, removed to the prime.

Well, after all this work and worry and study, it is certainly rather disheartening, to be haunted by a private suspicion that every movement made was probably about the worst that could have been made. Raising comb honey is, I fear, too difficult a problem for me to solve; though I did succeed in getting about 700 of my 1,000 sections very tolerably filled, and capped,— some of them most beautifully. This latter clause points to my difficulty. I want all the comb honey to be *most beautiful*. And again, I feel sure that with one quarter the work, double the amount of honey might have been obtained from those colonies, if worked for extracted honey.

Sheboygan Falls, Wisconsin.

For the American Apiculturist.

ITALIAN BEES.

A. M. FIRMAN.

Italian bees were accidentally discovered, during the wars of Napoleon, by Captain Baldenstein, who carried the first swarm across the Alps in 1843. In 1853 Doctor Dzierzon introduced them in Germany, and in 1860 into the United States. The honorary degree of doctor was conferred on him by the University of Munich, and he was decorated by the Grand Ducal Hessian Order of Ludwig and the imperial order of Francis Joseph. I mention this to show that governments and learned institutes and agricultural societies *now* acknowledge the importance of beekeeping. Doctor Dzierzon says, "The Italian bee forms a distinct race of *Apis mellifica*, differing from the English or German bees, being different in color and having other marked characteristics; this beautiful gold-colored bee was known by Virgil (4th book of his Georgics) as possessing *positive* advantages, which hold good to-day.

HOW I BEGAN KEEPING BEES.

First, I read A. J. Cook's "Beekeeper's Guide;" became very much interested. Then I got Doctor Dzierzon's "Forty Years among the Bees", read it, followed up with "A B C in Bee Culture," bought two colonies, started, and learned to manipulate, handle, divide and unite. Succeeded, and *now* for a queen. My book says, "July 7, 1883, received a beautiful queen from Henry Alley, Wenham, Mass." Succeeded in introducing her, and in raising some beautiful golden colored bees and queens, as directed by Alley's "Twenty-two Years in Queen-Rearing." In 1884, desirous of starting with the best strain of bees I possibly could get, I got of A. I. Root, one queen, a daughter of an imported mother, also an imported queen from Bianconi direct from Italy, and one from Doolittle. From these I raised three queens each. In 1885, I took the best of these and raised the queens of my seventy-five colonies now in my apiary. In 1886, by careful crossing of the best, I had a fine quality and strain of pure home-bred bees, acclimated for wintering purposes and fine honey gatherers, and I do firmly believe, I am going towards the coming bee. How I succeeded in breeding up will form another chapter.

Quasqueton, Buchanan Co., Iowa.

From 'Gleanings."

THE PAST AND THE PROSPECT.

BRIGHTNESS THROUGH DISCOURAGEMENT.

MOST of the readers of "Gleanings" are aware by this time, no doubt, that the honey crop of this season is likely to be exceedingly short. My locality is no exception to the general rule. unless it is in being rather worse, if anything, than the average. In fact, the season here has been most exceptionally bad. It opened badly. Fruit-blossoms produced scarcely a ripple on the apiarian sea. White clover came in abundance, but, except for two or three days, its blossoms remained almost unvisited by the bees. Basswood bloomed early and freely, but the taste of basswood honey never became perceptible in the hives. Mustard and sweet clover came at about the same time. For about two weeks the bees worked well on these in the early morning, continuing with less vigor on sweet clover throughout the day.

Mustard is gone now, and sweet clover, in the intense drought that

prevails, yields scarcely any honey. Strong colonies, devoted to extracted honey, are gaining very slowly. Colonies run for comb honey are doing nothing, except that some of them are putting a little into the brood-chamber. Ordinary colonies are not gaining at all; and many, I think, have less honey in their hives than they had in the spring. I have heard of several cases where bees were found starving during what is usually our best honey-flow.

As a matter of course, there has been little or no swarming. Only one colony in my apiary tried it; and that, on being returned, thought better of it and did not repeat the attempt. All colonies are unusually weak. Unless we have heavy rains soon, heart's-ease will fail, and with it our only hope of any income from bees this year.

What is the lesson to be learned from this? Dark as the prospect is, it is not without some points of brightness. In the first place, the markets will probably be cleared of all of last year's honey. This of itself is by no means a small thing in the establishment of better prices for this year's crop. Only those who have had a large experience in selling direct to retailers can have an adequate idea of the depressing effect on the market exerted by even a small quantity of unsalable honey. I can recollect instances where it would have paid me to have bought out a retailer's stock of honey at his own price, rather than let it remain on his hands, spoiling his trade, preventing the sale of other honey, and lowering its price. Now, if those who have any honey for sale this year would only hold it back until the market is bare of all old honey, and the demand for new begins to be urgent, they might realize almost, if not quite, as much for their short crop as they would have for a full one: at the same time preparing the way for better prices next year. Honey will probably be in greater demand this year than last, for the same drought that made a failure of the honey crop produced a great shortage in the yield of small fruits, so that there should be an unusual demand for honey as a table-sauce.

Many bees will probably starve the coming winter, which, I think, will be a good thing for beekeeping as a whole. In fact, I know of only one thing that would do more to put beekeeping on a sound and remunerative basis than a wholesale reduction of the number of bees kept and that is a corresponding reduction in the number of careless and incompetent beekeepers. I know this idea is not popular with some, but it is my honest opinion.

Although many of those who meet with losses will become discouraged and give up the business, there will be enough who will go at it again to make the trade in bees and queens good.

Look at it which way we will, I think there is much of encouragement to the careful and energetic apiarist. The present loss may be hard to bear; but when all things are considered, it may give greater results than a more apparent success.

> So failure wins: the consequence
> Of loss becomes its recompense.

At any rate, good management will go far to retrieve our losses and prevent them from becoming defeats. Stick to the bees, then, and give them the best of care. If there is any chance for a fall crop be sure that the bees can make the most of it. Above all, be sure that your bees go into winter quarters in as good condition as you know how to put them. To insure that, begin now.

J. A. Green.

Dayton, Ill., July 14, 1887.

For the American Apiculturist.

PRICE OF HONEY.

A. NORTON.

THE question of selling honey, like all questions vital to industrial or political economy, is a hard one to agree about. And, in the discussion of this question, we find all kinds of ideas coming before us and many theories urged as certainties, when, in reality, they are only fancies. One of these is the belief that producers can combine, withhold the supply and increase the price. It cannot be questioned that all business is governed by natural laws.

Method shapes so completely every channel of our modern business and social fabric that any artificial obstacle thrown in to stem the current will soon be swept away. And this plan to increase the price of honey by lessening the sale is an artificial one. It is founded simply upon a conception of one side of the subject of supply and demand.

If the supply fall short, and the demand remain the same, the price will advance. Thus far it looks well; but, if the supply is large, and offerings are withheld, let us see what follows. An artificial condition parallel to that of short supply is temporarily produced and prices may rise. But there exist the same crop, the same total reserve supply to be sold. The slower rate of offerings and sales to keep up high prices involve a longer time that the reserve holds out. If this time extends over a year, then a new crop comes in and the reserve accumulates.

This condition evidently cannot last. We therefore have but two ways to choose between: 1. To offer the whole reserve before the new crop. 2. To produce so little for new crop — about as much as has been sold — as to leave the reserve no larger than at the outset.

The first method will bring down the prices after all. For it makes no difference whether a hundred men throw each his little or one man his great mass upon the market; increased offerings make lower prices.

The reserve might be sold out evenly, one-twelfth of it every month, so to speak; and thus the price for the year might always be kept at the average. But this average would only be higher than the lowest and lower than highest prices that would prevail in the natural order of things.

The second method means idle colonies and retiring from the business.

It would be a suspension of the workshops to produce an artificially short supply, and would involve questions about each individual share of the shortage in production which it would be a constant vexation to adjust. Again, if the sales are to be gradual, that prices may keep up, whose honey is to be sold first? Either an immense reserve capital must be raised to buy the crop directly of the producer whenever he wants returns, or another troublesome question comes up almost incapable of settlement. For a pro rata of selling whereby each one sold his little fraction and received his little driblet—a given proportion of his crop each day, or week, or month—could not be made practicable at all. The former method would take it from the hands of the producers and transfer it to those of speculators, thus destroying the original plan at once. Space will not admit of my enlarging upon this subject. Much of the talk about it is based upon the farmers' ideas of the dishonesty of commission houses. Let me say that commission houses have their ideas

about the dishonesty of farmers,—taught by many a lesson, too. In these days of modern business ideas, an established business house expects to make its money by its business and to depend upon maintaining and extending its business. Few are so shortsighted as to expect to make a living by little steals of a dollar or two here and there. Acting myself, in a middle capacity between the commission merchant and the farmer, that is, sampling and buying grain of the farmers for the city firms, I have found first,—that many farmers, if they could get me to buy their grain on their own samples, would deliberately sell a poor lot on a falsely good sample and, in cold blood, see me or the San Francisco house lose any sum whatever to their own gain; while I was never yet wronged by a regular grain firm in the city. I am only speaking now of the *dishonest* farmer. I am not calling all alike. And I only want to illustrate that the claims of dishonesty are not all against the commission house.

But the question of actual supply and demand without any artificial element is very clear. No one is going to continue producing an article when the price is less than it costs him. Hence if people throw large quantities on the market at a low price you may know that there is still a living in it. The only exception would be where multitudes produced expecting to get some former price only to see their mistake when the article has to be sold at a loss. But this condition would be temporary.

If so many are in the business as to render it unprofitable this year, you may depend that enough will drop out to equalize it next year. I will close this letter by asking space for the opinion of Costigan, Cohen & Co., of San Francisco, an upright, sagacious and successful commission firm. Having written them for their views upon this question, they replied as follows:

To Mr. A. Norton.

Dear Sir:

The writer is not sufficiently familiar with the cost of production of honey here and elsewhere to give you all the information asked for in your letter of the 4th inst.

There is no doubt that should an association be formed, including all the apiarists in the state, they could establish higher prices for honey under certain conditions. These would be, that the honey all be marketed through the agent of the association, and that all members live up to its rules. That is one side of the question; the other is, that there has never been any such body formed, which has been more than temporarily successful.

The writer knows of just such cases, where men have banded together and signed written agreements not to sell their produce for less than a given price, and in less than an hour someone of them has offered to sell for less than the price agreed upon.

If all the members lived up to their agreement, it would make producing profitable, and outsiders would go into the business and undersell them. This alone would break up the association as its goods would not meet with ready sale and the individual members would themselves sell their honey for what they could get.

We never yet have seen a combination of any kind where some party to it would not undersell the established price.

After all, the question of supply and demand will regulate prices in the long run.

Yours truly,

Costigan, Cohen & Co.

Gonzales, San Francisco, Cal.
June 6, 1887.

CAUSE OF DROUGHT AND CYCLONES.

Thos. E. Hill.

During a recent journey to Europe the passage across the ocean was especially unpleasant, because of fogs, the only consolation in contemplating

them being that they represented the work of Nature in drawing moisture from the water, which, wafted inland, fell upon the soil in refreshing rain, gathered in the brooks and rivers and flowed to the sea, to be again thus sent back to freshen and brighten the parched earth.

The speed of our vessel was materially retarded by winds from the west, a common occurrence in the summer season. The fogs and moisture through these winds are driven upon the Continent, where drought seldom prevails, and particularly do they freshen the verdure of Ireland, and hence the brilliant green of the Emerald Isle.

In reflecting upon this subject, I contemplated the drought then prevailing in several of the western and middle states of the Union. What had they to gather rains from? Alas, what have they? For a generation our farmers have been draining their lands of moisture. They have run their tiling through every slough; they have drawn out the water from every swamp; they have dried up the pond; they have obliterated the beautiful little lake. In doing this they have made such easy and rapid egress for rainfall from the soil as to endanger the homes and farm lands of all the settlers along the great rivers in the southern regions of our country, already inflicting great distress, loss of life, and property equalling in value many millions of dollars—an evil which is growing in magnitude each year.

The result of this wholesale draining of the upper country of water is not only thus disastrous to life and property along the larger streams, from frequent overflow, but there is such absolute drainage of moisture from the earth as to produce severe drought, accompanied by such intense heat and dryness of atmosphere as results in the hurricane, the cyclone, and innumerable village, prairie and forest fires.

In the early days when the process of evaporation of moisture went forward from the swamps, the ponds and lakes of our western and middle states, an extended drought, with extremely intense heat, was a rare occurrence. In those days sunstroke was very uncommon, and the cyclone was comparatively unknown. This year we are in the second season of drought in various portions of the country, while every year brings its devastation from wind, the result of an excessively dry and frequently disturbed condition of the atmosphere.

With the land thus denuded of natural water supply, there is but one course for our farmers to pursue to save themselves from these evils. They may drain their soil, but they should gather the rainfall in ponds and lakes scattered throughout their lands. Instead of running the drains through and out of the swamp, they should lead to an excavation of such size as circumstances will permit, which should be made at a depth of three or four feet, where the water can gather and will remain throughout the year, quenching the thirst of animals, giving drink to birds, a reservoir in case of fire, a home for fish, a place of beauty on which one may sail the boat, an opportunity for the bath and for teaching the young people to swim. This will yield ice for the family, provide skating for the happy youth in winter time, and moisture, which, through evaporation, will pass into the cloud to be returned again through rainfall to the needy earth.

No fear need be entertained of stagnation from water thus held in reserve. Fish will of themselves purify it. Every rain will change it, while, if the lake covers an acre or more in area, the wind will constantly keep it pure. In proof of this, the writer has an artificial lake on his farm, the result of dredging a swamp, which is filled only by rainfall, the water being, in the dryest season, always perfectly clear and fresh.

On the low lands the general abandonment of farms and homes from river overflow will be the inevitable outcome of this water wastage in the high grounds. Such is already the fact, while the expenditure of many millions of dollars by the government, in the construction of levees and embankments along the great rivers, will be necessary for the further protection of adjoining property. Vastly better that this expenditure be made in holding the water where it is required in the up-country.

Dot the farms of our inland states with ponds and miniature lakes, and while they will afford health, attraction and pleasure in a thousand ways, they will give us back the uniform rainfall we had in the early settlement of the country, when successive seasons of drought, forest fires and cyclones were unknown.

[Those of our readers who live in that part of the country where cyclones and drought prevail will be particularly interested in reading the above.]

(*Selected.*)

RECEIPTS FOR DESTROYING ANTS.

HENRY T. WILLIAMS.

1. Take four ounces of quassia-chips; boil for ten minutes in a gallon of water, dissolving in the liquid while cooling four ounces of soft-soap.

2. Take one pound of black soap, dissolve it in four gallons of water, and sprinkle the solution through a fine hose over the runs and nests, taking care, however, not to water the roots of the plants with it.

3. The following is a successful poison: Ferrocyanide of potassium, one drachm; raspings of quassia, one drachm; sugar in sufficient quantity to form a syrup. The ants are said to devour this greedily and die almost immediately.

4. Fresh Peruvian guano will drive ants from any spot, however firm a hold they may have obtained on it. Paraffine and benzoline oil are said to have the same effect.

Turpentine, gas-water, flowers of sulphur, lime-water, a decoction of elder leaves, chloride of lime dissolved in water, and camphor have all been used.

5. For ants in a lawn put a large flower-pot over their hole or place of operations. The ants will build up into the pot, and in a short time it may be lifted up and carried away and dropped into a vessel of water, which will be the end of them.

6. For ants on fruit-trees put a line of gas-tar all around the tree, and that will stop their progress.

Ants in flower or garden beds may be destroyed as follows:

Take two ounces of soft-soap, one pound of potash, and about two and one-half pints of water. Boil the whole together for some time, stirring the ingredients occasionally. The liquor may then be allowed to cool.

With a pointed stick or dibble make holes wherever the soil is infested. Drop the mixture, filling the holes once or twice.

Fill small vials two-thirds with water, and add sweet-oil to float on the water to within half an inch of the top. Plunge these upright in the ground, leaving only half an inch standing out, near the nest or runs of the ants. The ants will come for a sip and go home to die. No insect can exist with oil stopping up its spiracles, or breathing pores.

Boiling water and arsenic are fatal; coarse sponge dipped in treacle-water, and afterwards dipped in scalding water, will catch thousands.

May be destroyed by a few fresh, unpicked bones being placed for them, or sponges wetted and filled with sugar, or treacle in bottles or pans.

FOREIGN.

HOW COUSIN JONATHAN GETS COMB HONEY.

Most of our readers have heard of Mr. Henry Alley, of Wenham, Mass., of queen-rearing fame; he is the present editor of the AMERICAN APICULTURIST, a monthly bee-paper that is second to none in the value of its articles on points of real practical interest to beekeepers. The number for June has five articles on comb honey from the pens of the following well-known American beekeepers:—G. M. Doolittle, Dr. G. L. Tinker, A. E. Manum, Dr. C. C. Miller, and G. W. Demaree. To reprint them *in extenso* would be beyond the limits of these columns, so I will endeavor to give you a digest of them: the information is too late to be of benefit for the present honey crop, but as our minds are now occupied with honey-getting, the facts will probably be more firmly fixed in our memories at the present time than they would be in the winter when bees are quiet.—*Amateur Expert in British Bee Journal.*

[The above shows how our efforts as a publisher are appreciated in a foreign land. We believe that the June, 1887, issue also the October number of 1886 of the API, were two of the most valuable papers of any publication devoted to bee culture ever issued from any office, yet not one of the papers here in America, so far as we remember, has ever mentioned the subject to its readers, notwithstanding the fact that "*all*" bee journals are published for the benefit of their readers. Most of the editors and publishers of American beepapers are mighty afraid that they will do some free advertising for their neighbor.]

From the Australian Beekeepers' Journal.

THE DRONE-TRAP.

WHAT IS THOUGHT OF IT IN AUSTRALIA?

Among the now numerous convenient inventions for beekeepers, the *Alley drone trap*, or *swarm arrester*, is likely to prove of the greatest value to those who don't care about losing swarms. This arrangement is a little movable porch to go in front of the hive on the entrance. It is closed with zinc, perforated with oblong holes large enough for the worker bee to get through quite easily, but too small for drones or *laying queens* to get through. The porch has an upper story, which can be entered from the lower one through two cones of fine wire net, with holes in their apex large enough for queens and drones to get through easily. When once in the upper story they are caged, for, although they could go back the way they came, they never do, because the way out is on the *top of a* cone or pyramid, and bees seldom or never enter an opening situated at the end of a cone or tube. Now if one of these "traps" is on a hive when a swarm issues, all the bees get through the zinc front, but the queen cannot, and she crawls up through one of the cones into the upper story of the trap, and is thus caged; the bees soon find she is not out, and cluster around the cage, whence the swarm is easily taken. Mr. Bonney, of Adelaide, writing to us his experience of these useful little arrangements, says:—"Do you use the Alley drone trap? It is a capital invention. I keep one on each of my pure Italian colonies during swarming time, and can then go to business without any fear of loss of swarms. If the bees swarm, the queen goes into the trap and remains there with the swarm hanging about the hive till I come home in the evening, when matters are easily arranged."

Mr. Alley himself says:—"You can go to church on Sundays in swarming time without thinking of your swarms all prayer time."

From the Australian Beekeepers' Journal.

FIXING FOUNDATION IN WIRED FRAMES.

THE methods usually adopted for fixing foundation in wired frames are either to rub the wires into the foundation with a *grooved button hook*, or some tool of the kind, or to press it in with "*Blood's roller*" (an American device), or, better, with Mr. Root's "*rocking tool*," an instrument like a portion of the periphery of a wheel, with a few sharp teeth on it. Each tooth is rolled on to the wires embedding the wire in the foundation. Foundation fixed by any of these methods is apt to part from the wires and curl up in very warm weather, or when used for newly hived swarms. The fact is, there is no real union between the wax and the wires unless the wires are heated. I have tried several plans for doing this, but none so satisfactory as warming the wires with a galvanic current from a good, large single-battery cell. The mode is very simple. Lay the foundation on a board which fit inside the frame; now lay the frame horizontally over the foundation, so that the wires lie nicely and evenly on the foundation; take the

wires from the two poles of the battery, one in each hand, and touch the two ends of each frame wire for a moment, one end with the positive and the other with the negative wire of the battery, and the frame wire becomes heated and melts its way down to the *septum* or *midrib* of the foundation; touch each wire of the frame in succession in this way, and the whole is fixed more quickly than by any of the other modes, and so firmly that you can only tear the foundation away piecemeal. If your battery is not strong enough to heat the wire the whole width of the frame, do it in steps, and you will find even that you can do it more quickly than by any of the other plans, with the satisfaction of knowing that the wires are as firmly attached as is the case with the foundation where the wires are embedded during the process of manufacture.

MR. SPURGEON AND THE HORNET'S NEST. — Mr. Spurgeon, speaking at a Blue Ribbon Society meeting, related the following anecdote:—He had once had a hornet's nest in his garden. He tried to kill the hornets singly, but it took him a long time to dispose even of one. At last, on a fine night — he did not previously tell them of his intention — he heated a poker red-hot and dropped it in the hole where they were. He did not stay any longer, but at once went in for meditation. He never saw another hornet. They seemed to be so pleased with the poker that they stopped in their hole forever afterwards. The living fire of the Gospel was wanted to burn, not one special sin only, but all sins from the human heart.—*British Bee Journal.*

Melbourne, May 27, 1887.

MR. H. ALLEY.

Dear Sir:

I have a number of inquiries whether or not I import any of your best queens. Until now the distance has in some way prevented me. However, I am anxious to try a small consignment of them, say six, if you could manage to forward them so that they would reach San Francisco a day or so before the steamer leaves there for Australia. I am importing large quantities of bee supplies from America every season. I receive the AMERICAN APICULTURIST every month and I hope soon to take orders to supply copies to several beekeepers here. Although not well adapted to our season, it gives a large amount of useful information. The queries and answers in the same number are indeed a very good thought. The answers are always well to the point without any darkness about them.

The industry in Australia is advancing steadily; to a certain extent, the sale of good honey is retarded by large quantities of bush honey which is sent into the market. However, I suppose that will not last long, as the comb honey in section boxes is coming into general use, and is now fetching from nine to twelve cents per dozen pounds wholesale. The Australian Bee Journal published here is doing good work in imparting the science of modern beekeeping, but I am sorry to say it has been a dead loss to the publishers. However, it is their intention to give it another twelve months' trial. Indeed it would be a great disaster to beekeeping to be without a journal. I also post you an October number of the Journal giving an account of a method to embed wire in foundation, and is now used by a number of beekeepers.

J. M. LLOYD.

Honey-Lemonade.—J. M. Shuck, Des Moines, Iowa, uses this recipe for honey-lemonade.

Make it in the usual way, using honey instead of sugar; nothing can be used as a summer beverage that is more grateful and refreshing. Try it, Many thousands pounds of honey may be used in this way, and the users all be benefited.

QUERIES.

Answers by Practical Apiarists.

Feeding Bees.

Query No. 31. The present season having been one of the poorest for many years for bees, it will be necessary to do much feeding this fall. I would be pleased to see the following questions answered in the "Api."

1. When shall I commence to feed?
2. How shall I feed? that is, what sort of a feeder is best?
3. Ought not all colonies to be fed sufficiently early in order that the syrup given them may be capped? It strikes me that late feeding never ought to be done, say later than Oct. 1. SUBSCRIBER.

ANSWERS BY HILAS D. DAVIS.

1. Bees should be fed about the middle of September.

2. A wooden feeder, so made to prevent drowning. It is placed over them in place of the section case.

3. By all means.

ANSWERS BY R. L. TAYLOR.

1. As soon after Sept. 15 as possible, or when there is no more nectar for the bees to gather from the fields.

2. Heddon's large feeder is the best and a tin milk pan the cheapest.

3. That is best, but bees which are to be wintered in a good cellar will do well if fed so late that the syrup is not capped.

ANSWERS BY C. C. MILLER.

1. As soon as you feel pretty sure the bees will not gather enough stores for winter, even if that comes in August, although September may do as well.

2. Any feeder that will allow the work to be done safely and rapidly. One good way is to fill empty combs with syrup.

3. Late feeding is very undesirable.

ANSWERS BY G. W. DEMAREE.

If your bees need it, feed them a little from time to time to keep them from want, and just after the first killing frost feed them as fast as you can get them to take the syrup till they have a supply for winter. Common fruit jars that will hold a quart or half gallon are good substitutes for a feeder. Fill them with syrup and tie a thin cotton cloth over their mouths and invert them on top of the frames. Four or more may be inverted over a strong colony at the same time. I have fed on a slatted board at the entrance of the hive after dark, using the fruit jars with good results.

ANSWERS BY J. H. MARTIN.

1. Feed up in September; feeding can be done in October, but for my locality, I prefer to have equalizing and feeding all out of the way during this month.

2. A simplicity feeder is a good enough feeder for me. I use them singly and several together. To feed only a few pounds, I use one feeder holding about two pounds. If I wish to feed a quantity I hang several feeders in a special frame in an upper story.

3. It is well to have the syrup capped, but we have had bees winter finely where much syrup was not capped. The bees were put in a dry repository. Dampness would probably sour such uncapped stores.

ANSWERS BY JAMES HEDDON.

1. It depends upon the latitude in which you live. If about the same as my own, which is 42° north, the ideas offered in your last sentence are about right. In many seasons I should prefer to feed as early as September.

2. I use a top feeder which covers the entire top of hive making a complete story of itself. It holds nearly twenty pounds of syrup or honey and can be refilled without the use of smoke or coming in contact with the bees of the hive and be closed so quickly that robbers cannot get a taste. It is so constructed as to be almost odor-proof, cannot leak outside the hive nor can the bees become daubed while taking the feed. I consider the feeder nearly perfection; many of your readers have no doubt seen cut and description in my circular or book.

ANSWERS BY DR. G. L. TINKER.

1. October 1 is soon enough to feed in this locality unless the bees fail to get enough honey in September to keep up moderate breeding.

2. I have discarded all other feeders but the bottom-board feeder. A hole is bored in the back end of the hive and an elbow-shaped funnel inserted. The hive is then tipped backward slightly and blocked. The feed is poured in, a pint or half pint at a time, every few hours till ten pints of thick syrup are fed, which is enough to last till April 15 the following spring, if the colonies are well protected. Most of our hives have a hole bored in one end of the "under cover" to the brood frames, and the feeding is done through it. A bottom-board made like that of the Bay State hive makes a splendid feeder. I make all loose bottom-boards with a raised rim so that may be used for feeding.

3. It is not necessary that the syrup be capped in the combs for bees to winter well. It is much more important that the colony is well protected. The feeding should all be done in this locality by October 15th.

ANSWERS BY J. E. POND.

1. Commence feeding at once so that the brood-nest may be fully formed at as early a date as possible.

2. Use frames the upper third or half of which are filled with capped stores. In the absence of such combs use any good feeder of large size, and feed pure honey, or sugar syrup.

3. Most certainly. For myself, I want all feeding for winter stores finished up by the first of October sure; but as seasons vary I take golden rod as a guide, and finish feeding by the time it ceases to yield nectar.

ANSWERS BY HENRY ALLEY.

1. Don't put off feeding later than September 1, unless as much syrup as the bees will need during the winter can be given them at one time. If only a few pounds can be supplied each day, feeding should be begun early.

Feeding bees induces brood-rearing. If feeding is put off till Oct. 1, young bees will be reared; they will not take a flight till they are ten days or two weeks old, that would take the season to November, and at that time many bee-keepers have their bees prepared for winter and in some localities bees have no chance for a flight after Nov. 1. In such a case the young bees reared after Oct. 1 would be the means of destroying the colony before spring.

I do not think it is a good idea to keep a colony excited during the month of October by feeding. A colony fed late will not winter well. Bees should not rear brood in October under any conditions.

2. I find nothing as good and convenient as the Mason fruit-jar for feeding bees. Get jars that will hold two quarts, those having all metal tips; with a wire nail or an awl, punch from six to twelve holes in the metal. Fill the jar and turn it bottom upwards over a one and a half-inch hole in the honey-board or top of the hive so that the bees can take the food from under the feeder. A good colony will take half a gallon in less than twenty-four hours. Should it rain, no water can get in the feeder or into the hive, provided the hole is made in the honey-board not far from the back end.

The best granulated sugar is none too good to feed bees. To each ten pounds of sugar add three quarts of water and when the sugar is thoroughly dissolved fill the feeders. Have the syrup as near the

consistency of honey as possible, so that the bees will cap it as soon as placed in the cells. Thin syrup ought not to be fed in the fall, unless fed very early; the water must be evaporated before the bees will cap it, and, unless capped, the syrup would sour long before spring, run out and destroy the colony.

3. Colonies that need feeding should be reduced to six or seven combs for winter. Then all the syrup will be placed in those few frames. When thus arranged the bees will cover all the combs and winter nicely. Try it.

Latest Swarms. Queenless Colonies. Fertile Workers.

Query No. 32. 1. Suppose a swarm issues in September, should the bees be placed in an empty hive, or the queen cells removed from the parent stock and the bees returned?

2. Is not late swarming induced by the bees superseding an old queen?

3. If this is the case should not a young queen be introduced?

4. How long may a colony remain queenless after September 1, without apparent damage to the stock?

5. Suppose a colony to remain queenless two months from September 1, will fertile workers develop? C. P. W.

ANSWERS BY J. E. POND.

1. I should re-hive it in the colony it issued from, for the reason, that even if I had filled frames of combs sufficient for winter stores, I should fear that there would not be brood enough reared after September 1st to make a good colony.

2. Sometimes it is, and probably such is the usual cause. It may, however, arise from other causes.

3. Yes; still it might not relieve the trouble.

4. It would depend upon the amount of brood. If the frames were full of brood, it would go through the winter probably, but there are so many matters to be taken into consideration that it is impossible to lay down a rule. Every colony must be judged by itself, and from its own circumstances and condition.

5. They may and they may not. Fertile workers have never troubled myself, but I judge from information and reading, that they are not so apt to turn up in the fall as in the spring. I should hardly expect to see them in the fall after September 1st, and should only expect to find them the following spring.

ANSWERS BY HILAS D. DAVIS.

1. Return to parent stock. I believe in strong colonies to put into winter quarters.

2. Sometimes by superseding an old queen and sometimes by the stimulus of the fall honey flow.

3. Yes.

4. I have never had occasion to experiment in that direction as I always keep my stocks well queened.

5. I do not know, as I never had a fertile worker in any of my apiaries.

ANSWERS BY G. W. DEMAREE.

1. If there were drones on hand, I would kill the queen and return the swarm. If I had no drones, I would kill the queen and introduce another if I had to buy one.

2. Yes, no other cause under the sun, and that is the reason I would dispatch the queen.

3. Yes.

4. I could keep the colony till March without apparent injury, if I was bound to do it.

5. They may and they may not. Generally, they will not at that season of the year.

ANSWERS BY C. C. MILLER.

1. That depends: as a general rule it might be best to return, but in a locality with a heavy and long continued flow of fall honey, the swarm might be hived.

2. I think hardly, but I don't know much about it.

3. I think not. When they commence the superseding business, they'll get through with it about as well to be let alone.

4. If little or no honey is yielding, the damage might not be apparent without examination till the next spring.

5. Generally not, but season may have something to do with it.

ANSWERS BY JAMES HEDDON.

1. Whether you accept or return the swarms depends upon circumstances and the latitude in which you live. Here, we should return the swarm, but not until after the bees had destroyed the cells themselves. We cannot afford to spend so much time and to handle our colonies over so much as to go into the cell-clipping business. There is a much surer and less laborious way which I have described in former articles.

2. Quite apt to be so induced.

3. It would be well for the colony to replace the old queen with a young one.

4. Until April 1 of the next year.

5. I think I have had fertile workers develop after Sept. 1. That is the time bees cease breeding here.

ANSWERS BY R. L. TAYLOR.

1. That depends; if you want increase and the swarm is strong, hive it on foundation. If the old queen is not valuable kill her and put the swarm back.

2. Sometimes I think, but not as a rule.

3. No, if that is the case let them rear a young one from one of the cells.

4. A colony, having plenty of brood on September 1, would not be greatly damaged if deprived of a queen for three or four weeks; but if the colony have little or no brood, the absence of the queen for one day would, I think, be a damage.

5. They would in some colonies; in many colonies they would not.

ANSWERS BY J. H. MARTIN.

1. For my locality, a swarm in September would be an unheard-of case, and would be returned to the parent stock.

2. Our bees never swarm or have the swarming fever except when getting honey freely. Swarms having an old queen will swarm at such times but, if the queen is very old and unprolific, she will be superseded and, ten times in one, there will be no swarm, or if a swarm issues it will be a small one.

3. It is a good plan to supersede all old and unprolific queens in August or September.

4. I don't know. I have had bees winter from September to February with no brood, but how much longer they would hold out without damage and no queen I am unable to say. It is well known that a queenless colony is usually very uneasy and the bees are constantly leaving the hive until it is completely depleted.

5. I have had fertile workers develop after Sept. 1.

ANSWERS BY HENRY ALLEY.

1. Destroy the cells, return the bees and give the colony a new queen. I would kill all queens that should lead off a swarm in September.

2. In my opinion, late swarming is owing, as a rule, to the superseding of an old queen; this is why I would destroy the queen that leads a swarm so late in the season.

3. Yes, as stated above.

4. A queen should be introduced late in the fall, as soon as it is known that a colony is queenless. Such a colony would winter unless

the queen was lost in July previous; but it would be in bad condition in the spring, so far as the number of bees is concerned, as the bees would be very uneasy all winter and continually getting out the hive; the sooner re-queened the better.

5. No: fertile workers would not take possession till spring. As soon as the bees can fly, in March or April, the fertile worker will commence to lay eggs. At that time the best plan would be to destroy all; as, if a queen is introduced, the worker bees would continue for a while to fill the cells with eggs, and, before any brood could be reared, the entire colony would disappear.

Old Bees as Nurses.

Query No. 33. We read in the bee journals that old bees cannot rear brood for the reason that they cannot nurse the larva. When a colony has been queenless a long time the worker bees lay eggs and drones are reared in worker cells. Do not old bees do the nursing for those young drones?

QUERIST.

ANSWER BY R. L. TAYLOR.

Certainly, I think no one claims that old bees cannot nurse larvæ, but only that they cannot do it as well as young bees.

ANSWER BY HILAS D. DAVIS.

Old bees are capable of nursing the larva as long as the queen lays eggs for them, young bees are needed and they have proper stores.

ANSWER BY J. H. MARTIN.

Old bees can rear brood, as I have repeatedly proven, by taking old bees from one apiary to another and giving young brood which was reared as carefully as though young bees were at work.

ANSWER BY C. C. MILLER.

You make a good point. Perhaps the better way would be to say that as a general rule old bees do not feed larvæ, but under press of circumstances may do so. There are exceptions to general rules. The rule is that a bee does not work in the field till more than two weeks old, but I have seen bees only five days old carrying pollen when no older bees were in the hive.

ANSWER BY HENRY ALLEY.

Old bees can act as nurses for a few weeks only, and then they will cease to nurse and rear brood. As the bees grow old, their interest or desire to rear brood is lost. It is not generally known that, even if a colony is left queenless several months, the worker bees will not or cannot lay eggs and did they do so no brood would be reared, as the bees remaining in the hive have lost their power as nurses and fertility on account of old age.

ANSWER BY DR. G. L. TINKER.

Yes, old bees may do the nursing in colonies having laying workers but they are unable properly to feed the larvæ. Stinting the food supply of larval bees results in undeveloped and undersized workers, queens and drones. An examination will show that the larval food is scantily supplied in such a colony. But a colony that has been queenless only two or three weeks will feed the brood of a new queen prodigally, and produce larger workers than at other times.

ANSWER BY JAMES HEDDON.

Old bees can and do successfully nurse larva, as we have seen demonstrated many times. It is fair to suppose that such bees are not as good for the purpose as young bees, because where the colony contains both, the young bees always attend that duty. It might be urged that such does not prove them better, but merely that the older bees do not do it because otherwise occupied in work which

they alone can perform, but again the law of evolution teaches us that if the young bees have been the nurses for thousands of generations they are at this time best fitted for that purpose.

ANSWER BY G. W. DEMAREE.

I frequently winter colonies of bees without queens and make them rear queens in March. The old bees of course rear their own queen and then care for the brood till young bees are hatched out. This answers your question as to whether "old bees" are capable of rearing brood or not.

If fertile layers are developed in a hive it is done before the bees "get old;" never afterwards. So far as my experience goes, I have never seen a fertile layer in a hive where the colony was wintered without a queen. But when the queen dies and leaves brood in the latter part of winter I have had fertile layers to appear.

ANSWER BY J. E. POND.

I don't know what bee journals "querist" read, but it is news to me that any apiarist of experience has ever said "old bees cannot rear brood." It has been often stated, that the young bees for some fifteen days after they emerge from their cell "attend to the housework of the hive, and act as nurses." As a matter of fact this is so, and that old bees act only as foragers when there are young bees in the colony. My experience, however, teaches me that old bees can and do rear brood when occasion requires, but that they do not do this as well as their younger sisters. This is the reason why queens should only be reared in colonies containing a large number of young bees.

A House for the Apiary.

Please give your opinion of Prof. Cook's "House for the Apiary." MANAGER.

A house for the apiary such as Professor Cook describes, would be a great convenience and well worth the cost to a large beekeeper.

DR. G. L. TINKER.

Bee houses are not favorites with myself. I consider the bees much better off when sitting in the open field, with such shading either natural or artificial as may be needed. Prof. Cook's model is perhaps as handy as any, and to follow it will save the time and bother of getting up another that might be no more if as handy.

J. E. POND.

There might be some improvements in Prof. Cook's house for the Apiary. I would prefer to have it built upon a side hill, so as to have a drop of three feet from the extracting room to the honey room, also a convenient door for rolling out barrels; and it seems to me the cistern is too large. The house, I have no doubt, would answer the wants of beekeeping on a limited scale for comb honey.

J. H. MARTIN.

In the first place, I neither practise nor approve of indoor wintering. A simple storage building is all that is necessary and should not cost over fifty dollars. It should have two rooms. It is absurd to think of a man having from five to ten apiaries and furnishing each with a house costing $500.00. I believe in a hive so constructed as to winter without loss and with less consumption of honey than when wintered in a cellar. Bees wintered thus will have more vitality, be in better condition and build up more quickly for honey gathering.

HILAS D. DAVIS.

As usual Professor Cook has hit a great many nails square on the head in his description of a house for the apiary. On some of the points, however, we differ. I do not want my house cut up into small rooms, prefer each story all in one room. I have a house, built three years ago, which cost $500 00 which suits me better than anything I have ever seen or read descriptions of. It is two stories, 18 × 30 feet, with an all stone cellar under it, 8 feet deep, which cost $225.00. Here, again, I differ with my friend Professor Cook, in so much that I would not again build a cellar, but rather a double wall house above ground, in which to winter bees. Such a room, of the size of my cellar, could be well built for the same cost and would be worth much more in summer, and I believe better and more convenient in which to winter bees. I have changed my views on the subject of cellars *vs.* houses above ground, in which to winter bees, after having tested several of each. With more time and space I will in future give my reasons and the management which makes the room above ground the safest and best.

JAMES HEDDON.

Having once been a practical mechanic and house builder it is natural that I should feel a deep interest in Professor Cook's plan for building a honey house as described by him in the "Api," August issue.

His plan is unobjectionable so far as the science of house construction is concerned.

The trouble is, the cost of such a building puts it out of the reach of nine out of ten of all the beekeepers in the land, if they are as cautious as I think they are and ought to be. With a five hundred dollar honey house on hand just now, and a thirty dollar honey crop to sell over its counters, I should think one ought to appreciate the old saying in vogue in my boyhood days which sounded something like "A fool and his money is soon parted." Bee culture is an humble pursuit, and the cases are very rare where it is safe to invest money by the hundreds of dollars in dead fixtures. For handiness and practical usefulness I would prefer a one story house built just as wide as I wanted the widest room to be, and extended in length till I had all the room needed. Such a house might have a good cellar, and yet the cost need not be great.

G. W. DEMAREE.

The American Apiculturist.

Published Monthly.

HENRY ALLEY,
MANAGER,
WENHAM, MASS.

TERMS: $1.00 PER YEAR.
SEE INDUCEMENTS TO SUBSCRIBERS.
Wenham, Mass., Aug. 1, 1887.

THE MANAGER'S CORNER.

That New Bee Disease.—Some two years ago we described a new bee disease of which more or less has been seen in nearly every apiary in the United States. At that time we gave our experience with two colonies that were diseased; and also gave a remedy that has been a sure cure and most effective in every case. The remedy is this: The honey-board or cloth that is placed over the frames is removed and then a handful of fine table-salt is thrown over the frames. In order to get the bees to take it quickly, about a pint of water is dashed among the bees and combs. In every case where this remedy has been tested all signs of the disease disappeared in the course of

two weeks, or as soon as what bees were diseased had died.

I have been much surprised of late to see how much complaint of this disease has appeared in some of the western bee journals. Now if Bro. A. I. Root, W. Z. Hutchinson, J. E. Pond and some few others, will read the above carefully they need not acknowledge the fact in print, as they have lately done, that they know nothing about a remedy for bees having the above disease. It will pay you all to read the API with more care.

Bee Feeders.— Feeders are in great demand just at this time. Beekeepers who have never had any need for such things have been obliged this year to use them.

We can supply the Mason fruit-jar feeder in any quantity at $2.25 per dozen for quart feeders. These jars can be placed on any hive and no syrup will run out nor will they leak at all. When placed on the hive no water can get in about them as they are made of glass. It is known, without much trouble, when the feeder is empty.

Post yourself up on "feeding bees" by reading query No. 31. This query has been inserted in the API before, but as so much feeding must be done this fall, many new readers will be much interested in reading the answers again. Don't put off feeding too late; attend to it early in September. Late feeding is a decided disadvantage to any colony of bees.

Fertility of Queens.—Complaint is sometimes made that queens do not live as long as is claimed in the books and bee journals. Some claim that a queen should live and keep up a strong colony for about three years. Let us look at the matter for a moment and see whether a queen ought to live three years.

Queens that have been known to live three years were kept in box-hives, the brood-capacity of which was not over 40,000 young bees each season. Now, if a queen is capable of laying only 150,000 eggs during her life and if cell room is furnished so that she can deposit nearly 100,000 of those eggs in one year, it is a plain matter to see that she would give out during the second year; in fact she would not keep the colony up in point of numbers during the second season. If this same queen was in a box-hive and so cramped for room that she could lay but 40,000 eggs a year, she would be likely to live three years.

We think experienced beekeepers will concede the fact that there is a limit to the egg-producing capacity of a queen bee. They are not a machine, but come under the general laws of all animals or insects that reproduce and propagate from eggs. During our experience of thirty years in bee culture we have transferred 500 colonies from box-hives to movable frames.

We seldom ever found over four L. frames of brood in any box-hive and oftentimes not over two frames of brood. Those who use the L. hive or other frame hives know that there are from seven to ten frames of brood in each hive. It would be unreasonable to suppose that a queen could keep up such a supply of eggs for more than two seasons. Of course there will be some exceptions to this, but three-year-old queens are rather scarce.

For the above reasons it is not policy to keep a queen in any colony over two seasons, as nine out of every ten such queens would fail before the honey harvest commences the third year.

Experienced beekeepers are invited to send us their opinions on the above subject. We also invite beekeepers of experience to send us articles on any subject relating to bee culture.

Uniting Bees.—There is no better way to unite bees than the following: Let uniting alone till all the brood has hatched. Then have at hand a box that will hold a bushel and having a wire cover as well as a wire bottom to give ventilation.

Brush all the bees from the combs of the colonies to be united into the cap of a Langstroth hive or any box which is as convenient. When all is ready, dump the bees into the wire box. Let them remain queenless for a few hours or till about dark, then turn them down in front of the hive they are to occupy. Three days later give them some tobacco smoke and let a queen run in. Do this at night or you may have a case of robbing.

For such work as the above, that is, removing the bees from the combs, we always take the hives into a bee-room and use the tobacco fumigator to quiet the bees, then nearly all of them will stay in the box when brushed from the combs.

The process is this: go to the hive and blow in some tobacco smoke, then cover the entrance with a wire-screen, such as all beekeepers should have at hand for keeping bees in the hive and giving proper ventilation at the same time. After closing the hive it is taken into the bee-room and a little more smoke is given the bees, at the same time light thumping on the hive is kept up to make the bees fill with honey.

Then they are allowed to remain quiet for a few moments or until the loudest humming ceases; then the honey-board or cloth covering is removed, the frames taken out, and all the bees brushed into a box as stated above. When in the box, if they attempt to run up and over the sides, more tobacco smoke is blown among them and they will keep quiet.

If the queen is not found as the combs are removed, she can usually readily be found in the box. In order to find her, the bees should be "poked" over with a piece of a section box and in no case with a brush of any kind.

The above is a process we go through every day from May 8 to Aug. 15. Sometimes as many as four colonies are gone over each day.

Instead of uniting the bees, we place them on four combs with a few eggs to rear queens. If you want to know the rest of it you should read the "Beekeepers' Handy Book." In its pages will be found more that is new about bees and queen-rearing than in all other works on bee culture combined.

Blasted Hopes.—Many beekeepers think they have reason to be discouraged by the experience of the present season. We have kept bees thirty years and never saw but one such season during that long experience. Although the present season is very discouraging and especially so to the beginner, we think there is no reason for all to feel that way, as the failure of the present year is most likely to be followed by one of the very best honey harvests. At any rate such has been our experience. Get your bees in good condition for winter and make every preparation to harvest the expected large crop of honey in 1888. Don't let even one colony starve, give each one dollar's worth of sugar and all will go through the winter safely.

The next thing to do is to read all the first-class bee journals the coming season. In this way you can post yourself up regarding the best methods of bee culture and of the best apiarian fixtures. Keep abreast of the times, this you cannot do unless you read the experience of all others as given in the various bee-journals.

Destroyed by Fire.—In commenting on a fire which recently destroyed property to the amount of $3,000.00, belonging to a beekeeper in Maine, editor Newman remarks as follows:

"We sympathize with our friends in their loss, and are very much surprised that while they say the loss amounts to $3,000.00 they do not intimate whether or not the property was insured.

It seems to us that it borders on "criminal carelessness" for anyone to neglect to insure their property against fire, etc., when they have dependents who would suffer by their inattention to the *duties* of life. We do not know that this is the case with friend Mason (and hope it is not the case), and these remarks are not intended to be personal; but they show our views of the importance of insuring property against a calamity.

We will also state that we do not think a man has the right (in the light of the present), to neglect to insure his life, when he has a dependent family leaning on him for support! He should provide for them by an insurance on his life, and carry it, if it need be, to the personal sacrifice of some luxury (or even necessity), so that his offspring may not be "beggared" in the event of his death."

Mr. T. W. Cowan, Editor of the British Bee Journal, and lady, are now "doing America." On Tuesday August 2, they were entertained by Capt. J. E. Hetherington of Cherry Valley, N. Y. Mr. P. H. Elwood and Mr. J. Van Deusen, two prominent beekeepers, joined the company.

Our distinguished visitor should not return to England without visiting Mr. Doolittle. They will not of course have time to visit all our prominent beekeepers, as it would take a long time to do so. We hope their visit to this country will be a pleasant one.

Those western Agricultural papers that copy from the Api should be more careful and not credit them to the "Am. Agriculturist." People who read our articles must have an idea that the "Am. Agriculturist" is pretty well filled with matters concerning bee culture.

We have just received No. 1, Vol. I, of the *Australian Bee Journal*, published by Hopkins, Hayr & Co., Auckland, N. Z. It is gotten up in good style and we wish it success.

Take Courage. — Reports most discouraging of the failure of honey crop come in from every quarter by every mail. Beekeepers should be prepared to take the bitter with the sweet.

Take courage, friends, and get ready to harvest the crop of 1888. A fellow who cannot stand a little set-back such as all have experienced the past season will not make a success in any enterprise.

Brothers Pond, Heddon and others have not told the readers of the API why it was that weak colonies wintered better than strong ones last winter. We *all* give it up. It would be all theory to explain.

Mr. Ivar S. Young, of Christiania, Norway, expects to be at the Bay State Apiary on Sept. 5. We think he never will regret that he travelled so far to meet the beekeepers of America.

GLEANINGS FROM CORRESPONDENCE.

Stratford, Ont.

If you will pardon the liberty, I would suggest that you resume advertising your own goods in your journal as formerly.

E. W. P.

[Prices of most of the goods we have for sale, will be found in each issue of the "Api." Just what we shall do in regard to our price-list for another season we cannot now say. We shall issue no new price-list till Jan. 1, 1888.]

Walton, Ky., Aug. 1, 1887.

FRIEND ALLEY:

The queens were received all right July 29. I am very much pleased with them. They are safely introduced to strong colonies and I hope will soon be all right. We are almost burnt up with drought and hot weather—104° at noon. Yours truly,

L. JOHNSON.

Orangeville, Ont., June 20, 1887.

DEAR SIR:

I received the queen and was very much pleased with her looks; she arrived here on the 15th inst.

My first swarm for the season came out on the 12th of this month and have had four since, making five; the bees seem to be doing well on clover here now. I am more than pleased with the June number of the "API."

Yours very truly,

WM. I. ROBINSON.

York, Penn.

MR. ALLEY:

I find the drone and queen-trap, which I received as a premium when I subscribed to the APICULTURIST, a great convenience for regulating swarms and trapping drones.

I take three bee journals and prefer the AM. API. for its general make-up and the solid facts we learn from its well-filled pages.

MORRIS W. STRICK.

Hitchcock, Ind.

MR. ALLEY:

We have had no use for the drone-trap this year, but I think none the less of it for that, for I would not be without it for twice what it costs me. I like the API very much so far as I have read it.

WILLIAM BUNDY.

Hamilton, Minn.

Bees have done very poorly. No clover honey whatever. Basswood came to empty hives. The drought makes a slim prospect for buckwheat.

I had only one swarm from fifty-eight colonies. The API, "Handy Book" and drone-trap are indispensable.

C. H. BABCOCK.

Marion, N. Y.

I like the API very much, also the drone and queen-trap; they have saved me much more than the cost.

G. P. HOWARD.

Florence, W. Va.

I am a beginner; commenced with one hive last year; it swarmed four times; wintered three colonies and have nine colonies now; six are in home-made Langstroth hives; expect two more swarms soon.

There are no Italian bees within forty or fifty miles around me that I know of, and I am acquainted with all the principal beekeepers. They use

the common box-hive and kill the bees in the fall. I will try to work a little different. Yours,

J. W. HARTMAN.

Morrill, Kan.

MR. HENRY ALLEY.

I have to-day received the three queens, all in good shape, not a dead bee with them. They are very fine queens; many thanks. Inclosed is $1 00 for the API for another year. I could not do without it.

Bees not doing anything this year. Everything dries up; this makes the third year it has been too dry here. If we do not have rain soon shall have no show for bees.

JOHN WETSCHY.

Morgantown, Pa.,
Aug. 3, 1887.

DEAR SIR: The honey crop this season in our locality is very light indeed. Early in the season the prospects were flattering, and the bees seemed to be in good condition.

Raspberry was plentiful and the bees worked on it early and late. White clover was plentiful also, but it yielded but little nectar. We expected something from basswood, but were disappointed in that, the bloom only lasting a few days. Sumach followed. The bees seemed almost crazy over it. We counted as high as twenty or more bees on a single bunch of blossoms. What the mints, buckwheat, etc., will yield we cannot tell. We expected every colony to swarm, but only got two prime swarms.

A colony of black bees gathered ten pounds of white honey during June, and an Italian colony about ten pounds during July. The balance made no surplus and will have to be fed for winter. There are plenty of bees and brood. The foundation in the sections that were put on is fastened and partly drawn out, some altogether, so we will have a start for the next season.

The month of July was the hottest we have had for many years, and yet we had quite a number of refreshing showers. I have learned from my friends in the bee business throughout the country that they had about the same results.

Good, white comb honey commands twenty-five cents per pound, ready sale at that.

Yours truly,

EVAN R. STYER.

West Walworth, N. Y.

HENRY ALLEY.

DEAR SIR:

I had two swarms come off on which I used the drone and queen trap.

By the time I had changed hives putting the new one in place of the old, the bees came back to find their queen. They entered the new hive like a flock of sheep. I opened the trap when the bees were joined by the queen, and all seemed happy.

I had taken a seat within two feet of the hive. The bees were like a cloud about me, but did me no harm. I shall not keep bees without using the traps.

S. HOPKINS.

Woodcock, Pa.

The honey crop is very small here. My bees averaging only $20\frac{1}{2}$ per colony, spring count. The box-hive men are as usual selling their honey at whatever prices they can get, because they are too stingy to take a paper. Good honey will bring a good price as soon as the other is out of the market.

J. H. R.

Lancaster, Pa.

My bees up in York State have done splendidly this year. The queens I had of you last year and two years ago turn out immense swarms and ahead of any I ever saw

Yours truly,

B. G. DODGE.

South Chelmsford, Mass.

MR. ALLEY:

The API is the most instructive and interesting paper on the management of bees of any I know published in the English language.

JOHN B. MELVIN.

Pawtucket, R. I.

FRIEND ALLEY: Since July 1, basswood has bloomed and the shade trees about town have yielded well and a few extra strong colonies of Italian and Syrians have yielded, and given me from twenty to forty pounds of nice white honey in sections. Bees are now kept busy on a field of sweet clover and another of buckwheat. In the country, chestnut yielded well and boxes were well filled with this rather dark honey. Raspberry, white and alsike

clover were a failure. Hope the second crop will yield and shall try for fall honey. Yours truly,

SAMUEL CUSHMAN.

Gonzales, Cal., Aug. 2.

FRIEND ALLEY:

In answer to your question I will say that our honey crop this year is extremely small, such as it is. It is too early to give accurate figures; but soon as I can I will do so.

Last year the state produced 800,000 lbs. comb honey and 6,000,000 extracted This year my correspondence in most southern counties (the real honey region) several more northern parts where rain seldom falls, all show the same condition: little nectar in the flowers. I repeat, I will give figures when I get them.

A. NORTON.

Christiansburg, July 24, 1887.

MR. ALLEY.

Dear Sir:

I would like to inquire through your paper of those who have tried the close-fitting Heddon brood frames, if they have been troubled by the moths hiding and burrowing in between the ends of the frames and the end of the case. Very truly yours,

JAS. ERWIN.

[We never used, nor yet ever saw a Heddon hive and can make no reply from experience. Will those who have used that hive answer the above question? A few moths will most likely be found hidden away in the out-of-the-way places in any hive; their presence there can do no damage.]

Constantia, O.

MR. ALLEY:—

The last trap you sent has arrived in good shape. I like its appearance, but have had no opportunity to test it. We *lost* one swarm (on the 4th) that probably would have been saved if that first trap had come. Can you not give, in the API, an article on trapping drones? Is it best? If it is, when to do it?

Respectfully,

MRS. W. O. CAULKINS.

[The time to trap and destroy drones is when they are not needed. We think it is best to destroy all drones save those in one colony, and let those be of the best strain in the apiary. The best way to improve the apiary is not to use the drones of any undesirable strain. If you have a colony of bees that possess all desirable qualities, preserve the drones and cross the queens of the other colonies from that strain.]

I have some Albino bees and like them very much for their gentle disposition, and energy. They are afflicted, however, with the trembling disease, while the best Italians and hybrids are not. Can you give me any light on this subject.

C. H. D.

[Reference is made to the above disease in another column. Salt will kill the disease in a few weeks.

Two years ago we purchased twenty colonies of bees afflicted with the nameless disease. Salt was applied freely, and in the course of a few weeks all signs of the disease had disappeared. Apply the salt as stated elsewhere in this issue of the API.]

Hamilton, Ohio.

EDITOR API.

I suppose I shall have to take some of the capped honey from my hives in order to give the queen room to deposit eggs. The combs are full of pollen.

Could you advise us in the Sept. issue of the API how to manage our bees to keep up brood-rearing till Oct?

T. K.

[Brood-rearing may be kept up by feeding about one pound of syrup each day. Feed at night. Here in New England the bees have more or less brood till Oct. 10. The queen usually stops laying about Sept. 20.]

NOTES FROM THE BAY STATE APIARY.

HENRY ALLEY.

FILLING ORDERS FOR QUEENS.

On Saturday, Aug. 6, we put up and mailed fifty-two queens and cleaned up every order we had on our books.

This is one of the years when the rearing of queens is an easy matter, as with one exception we have had no drawback. Even the weather has been favorable all the time. Nearly all our 260 nucleus hives now (Aug. 20) contain a beautiful queen, while there are 200 queens in the nurseries and 200 cells nearly ready to hatch.

We had not long to wait for more orders as the evening's mail brought a fresh lot of orders as does each mail that comes in.

FEEDING BEES.

We find that feeding bees is a thing that must be followed up in our apiary through the entire season. The golden-rods are coming into bloom, but the bees do not gather any honey from them. A glass fruit-jar may be seen on many of our hives, as that sort of a feeder is the most convenient one we know of for feeding bees.

Our nucleus colonies have already made way with nearly 800 lbs. of granulated sugar, and before the season is over it will require nearly as much more sugar to keep the bees in good running order.

HATCHING QUEENS IN NURSERY CAGES.

Nearly all our queen-cells are placed in the nursery to hatch. There is one advantage in doing so. Every queen dealer knows that many cells are worthless. Well, if such cells are placed in the nucleus hives to hatch, it cannot be known that a queen does not emerge from them till the hive is examined. All this is a loss of time. By placing the cells in the nursery each queen may be seen and examined before introducing and if any one is not up to the standard they should not be introduced, and here is a saving of several days' time again.

INTRODUCING VIRGIN QUEENS.

We never lose any queens by introducing. Every virgin queen is introduced by fumigation of tobacco smoke. This is a method that has been in practice at the Bay State Apiary upwards of twenty-seven years. Our method of introducing is this: No queen is introduced until the nucleus has been queenless three days, and then just before sunset the old tin fumigator is loaded with fine tobacco made from the ends of cigars, dried in the sun and ground up very fine between the hands. This burns freely and is not as strong as chewing tobacco, which latter would kill the bees if used. Last night, August 20, sixty-three queens were introduced in less than one hour's time, and from past experience I can safely say that not one of those queens will be destroyed. If one goes along by these hives the next morning nothing will be noticed out of the way except a small wad of grass may be seen at the entrance of each hive which was used to close the entrance to keep the bees and queen in after fumigating.

PLACING HIVES ON THE GROUND.

All the nuclei in the Bay State Apiary are placed on the ground. We cannot furnish stands for so many small hives and it is not convenient to use them in such large numbers. One advantage in placing the hives on the ground is that the grass protects the colony from being robbed, as robber bees can-

not find the entrance to the small hives when they are partly hidden in the grass. Then again, it is often necessary to "vamp up" the small hives with bees. This is easily and quickly done by dumping a pint of bees down in front of the hive and they soon run in, but if they had to climb up a foot or more to reach the entrance many bees would take wing and robber bees would be there also.

BEES MARKING LOCATION.

Mr. Doolittle has had considerable to say about painting hives and marking them so that when the queens and bees take a flight they will be sure and return to the right hive. My opinion is, that bees do not and cannot distinguish between one color and another,—color blind, perhaps. The bees seem to mark the location by the surroundings more than by color. The visitor who comes to my yard does not find my hives, especially the nucleus hives, all placed in rows and everything up in fine shipshape order as the fancy beekeeper has things. Should my nuclei be arranged in rows as some people who do not understand think they should, not one queen in a dozen would enter the right hive on her return after a flight. Therefore, my hives look as though they might have been shot into my yard from the mouth of a big gun. Well, we never lose a queen by her mistaking the hive, though it would seem to a stranger that not one bee in the yard could find its home as the ground is so completely covered by small hives. The location and position of the hives make it an easy matter for the bees and queens to know their own home.

IN-BREEDING.

Not one drone has been reared from the queens that are used as queen mothers, and not one queen has been reared from the drone mother, so you see there is no in-breeding in our apiary.

THE TRADE IN QUEENS.

Orders for queens come to hand every month during the year, but the shipping season is from April to Oct. 20. We ship more queens between Aug. 1 and Oct. 1 than from April 1 to Aug. 1. Hundreds of beekeepers discover late in the fall that some of their colonies are queenless. Then, again, the month of September is a good time in which to renew queens. It is all bosh to say a queen cannot be successfully introduced unless the bees are gathering honey. Introduce by the three-day method, and it will make not one particle of difference when you introduce queens.

BEES ROBBING.

Although we have such a large number of small colonies in our apiary and from thirty to fifty full colonies, we have not had one case of robbing in our apiary this year, notwithstanding that the natural forage has been so scarce all the season. We feed mostly sugar, nothing else to the nuclei, and do most of the work in opening hives in a bee house; therefore we do not give the bees any occasion to rob. When we have had robbing, it is most easily checked by placing a strip of glass over the entrance and compelling all the bees to pass out at one end of it. No robber bees dare to enter, and if one happens to be in the hive before the glass is used, on his return to enter again it discovers the obstruction and will hesitate some time before it will even attempt to pass through the narrow gate.

THE DRONE AND QUEEN-TRAP.

[A CORRESPONDENT wishes me to report my experiments with the Alley trap, as I promised last year I would

do. In response to this request I will say that, just before the swarming season opened, I attached Alley traps to the entrances of a dozen or so of the strongest colonies in the Hyde apiary, of which I have made frequent mention. On all hives, whether portico or Simplicity, I found it necessary to secure the traps to the front of the hives, "toe-nail" fashion. I then directed the lady who was to watch for swarms that, when one came forth, she was to fasten the trap (if the queen entered it) among the flying bees, on a rake. After being clustered, the bees were to be hived in the ordinary way. Some two weeks after, when I went down I saw that about half the traps, under the influence of the sun and rain, and the consequent shrinkage and swelling, had become partially detached from the hive—enough so to allow the bees to pass in and out, back of the traps. As queen-catchers, these, of course, were useless. Upon inquiry, Mrs. Hyde told me she had caught two swarms by placing the trap among the flying bees, and that the Alley trap, with these two, was a success. The other swarms, in consequence of the loosening of the trap, had to be hived in the good old-fashioned way.]

The above was taken from "Gleanings." It strikes us that the person who handled the traps above spoken of is not one of those practical fellows whom we read about. One statement strikes us as being peculiar. He says: "The influences of the sun and rain had shrunk the wood so that the queens could pass out without going through the trap." Those particular traps (not made by us) must be made of a queer kind of wood to have them shrink as much as stated. A piece of wood but two and one-half inches wide to shrink nearly one-half an inch must be of a variety that does not grow in this country. Certainly the wood did not shrink all from the edge, nor did it shrink nearly one-fourth of an inch (which it must do to leave sufficient room for a queen to pass) from the back edge; of course it shrunk full as much at the opposite edge or side, which would make nearly one-half an inch in all. Can a man be found in the world who will believe such an improbable story? Well, we will let that pass.

One other point: "I found it necessary to secure the traps to the front of the hives, "toe-nail fashion." Why could not the writer of the above have been honest enough to have informed his readers concerning the kind of an alighting-board he uses? If the alighting-boards to his hives are flat and two and one-half inches wide, there would be no need of fastening the trap to the hives, "toe-nail" fashion, as the traps would stay in place without nails of any kind. We have from twenty to forty of the traps in use all the time and never have found it necessary to fasten them to the hives in any way.

We have no porticos to our hives, and the sun and rain have full play during the entire season on the traps and not one of them has ever shrunk one-sixteenth of an inch, and we will guarantee to place fifty traps of our make on fifty hives, and they shall be exposed to the weather, unprotected by anything for three months, and if one of these traps shrinks or in any way without hands gets out of place we will pay ten dollars for each one found in such a condition.

The above shows to what extent we believe the story which is copied from "Gleanings." We care not who makes such a statement, the whole story is very improbable.

SPECIAL NOTICES.

Now is a favorable time to subscribe for the AMERICAN APICULTURIST. You can get it for one year and as fine a queen as we can rear for $1.50. The queen alone is worth $2.00.

Our supply of queens, in all probability will last till Oct. 1, but do not wait to order till then. Send the $1.50 at once and secure one of the finest, golden-colored queens you ever saw.

Remember that any yearly subscriber, or those who renew, can get one queen for fifty cents.

TO OUR SUBSCRIBERS.

We have on hand several hundred beautiful golden-colored Italian queens as any one ever saw. We will guarantee every queen to be perfect in every respect. The bees from these queens are beautifully marked and when a pint of them are together they resemble so much corn meal, they are of such a bright, golden color.

Any subscriber to the Api can get one of these tested queens for $1.00; or three queens to one address $2.75, or five for $4.50. If these queens are not perfect and satisfactory in every respect we will return the money or promptly send other queens.

Now is a chance for any reader to improve his apiary by infusing new blood. We guarantee these queens to live in the cages, at least three days after being received by the purchaser, and if you will introduce them by the following method we guarantee safe introduction:

HOW TO INTRODUCE QUEENS.

Remove the queen from the hive you desire to re-queen and in just seventy-two hours later (three days) fumigate the bees with tobacco smoke or even with spunk and the bellows' smoker, and during the excitement let the new queen run in. Do this just before dark, or after sunset.

Do not open the hive for a week. Queen cells will be started, but pay no attention to them. The new queen will dispose of them before any will hatch.

Send in your orders promptly and the queens will be sent by return mail. Every one of these queens will produce as handsome a colony of bees as can be found.

These queens are from our new winter strain, and were it not for boasting would say that their equal cannot be found in the world.

All money received after the supply of queens has given out will be returned at once.

Any one who desires can come to our apiary and select his own queens; no extra charge.

All who Subscribe for the Apiculturist, at any time, will receive one of our combined Drone and Queen-traps free by mail. This is our method of introducing the Apiculturist and our Drone and Queen-traps into every apiary in the United States.

Those who receive the trap as a premium must not expect to get the Handy Book or a queen for fifty cents, as the profits are so small that only one premium can be given each subscriber.

Our Club Rates.

Am. Apiculturist and Am. Weekly Bee Journal,	$1.80
Am. "Api" and Gleanings (semi-monthly)	1.90
" " " Bee Hive (bi-monthly)	1.00
" " " Beekeepers' Handy Book	1.50
" " " Cook's Manual	1.70
" " " A Year among the Bees	1.50
" " " Alley's drone and queen trap	1.00

Now would be a good time to test the Perfection Feeder advertised in this issue by J. E. Hastings.

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., OCTOBER 1, 1887. No. 10.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt shipment. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

EXTRACTING.

JOHN H. MARTIN.

ARTIFICIAL SWARMING, ETC.

THE outlook over the beekeeping field gives us a view of many apiarists giving their energies to some special feature of the business, and for which experience has taught them they are especially fitted.

For instance, here is a man who has a special gift for raising beautiful comb honey. The sections and the honey seem to have an extra nice look about them, that puts them all within the class denominated gilt-edged. If we look in another direction we find a person who is producing extracted honey in large quantities and in qualities that charm the most æsthetic taste. Another person is devoting attention to the rearing of fine queens, and if there were sale for bees at all seasons of the year we should soon find men engaged in raising bees for the market, but that industry is evidently for the man of the future.

Another view, and we find a *very few* trying to develop the honey market.

Locality may have much influence upon these various branches of our industry, and to those who frequently ask which they shall raise, comb or extracted honey, I always tell them to raise just what taste, skill and locality point out that they should raise. It is my impression that a locality that has a short and sudden rush of honey is the locality for the extractor. My own locality is such a one, and for several years I have made the business of obtaining extracted honey a specialty.

How frequently we hear of some farmer who, having caught a stray swarm of bees, has secured a large amount of honey to the astonishment of the entire neighborhood. When a single swarm can thus accomplish wonders, our aim should be to make many swarms do the same. In order to give them a chance to do this, the first thing to be considered is the wintering of the bees in such a manner as to have them come out very strong in the spring. But I am willing to confess that I have many weak colonies in the spring, and there is much nursing necessary to bring our colonies up to the required strength. My first move is to get all of the brood to the front of the hive. My frames hang across the entrance and the entrance is contracted. I try to winter each colony so that there is no necessity of contracting the brood-nest with cumbrous division-boards. But where contraction is necessary I usually tuck the quilt down between the combs, and if the little swarm has plenty of honey there is no use to give frequent examina-

tions until young bees begin to hatch freely. There is also no advantage gained in stimulating, for the queen cannot enlarge her brood-nest until there are young bees hatching to protect and care for it. Of course many of our swarms come out with hives full of bees, and several frames of brood. Such colonies can bear stimulating and spreading of brood, and will soon be so strong that they can spare frames of brood to aid the weak. If every swarm was equally strong I would not care to stimulate, for if left to themselves with the exception of giving the queen plenty of room, each colony would be crowded with bees as soon as the honey season opened.

I use a 11 × 14 brood comb and just as soon as the brood apartment is crowded with bees, the upper or surplus story is adjusted, and having a quantity of empty combs every hive receives its full complement. I have two methods of management during the extracting season; one is to prevent increase as much as possible and the other to increase by artificial swarming. With the first method I put on a queen-excluding honey-board and extract the honey as fast as the combs are well filled and about half sealed. The swarm will settle itself down to a specialty of honey getting and will seldom swarm unless they have an old or an unprolific queen they wish to supersede. Young and prolific queens are therefore the ones we try to have in every hive. If the season is over prolific in swarms (as some seasons are) a drone-trap can be applied to advantage.

In the management for increase and honey, I leave off the queen-excluding honey-board and give the queen full liberty to all the laying space she can occupy. As before stated, we try to have only vigorous queens, and as a result we have many that will fill fifteen of our combs with brood. If the queen seems to crowd the second story with brood, I put on a third story filled with empty combs. This extension capacity of a hive has given me a thousand pounds of honey extra in a season in an apiary of one hundred colonies. When I commence to extract I commence to increase, wholly by artificial swarming. From every hive that has an abundance of brood, are taken two or three brood-combs with adhering bees, being very careful to leave the queen in the parent swarm. The brood is selected with care. The hive contains ten brood-combs and at least six brood-combs with hatching bees are selected for the new swarm; the other four contain eggs, larvæ, sealed brood and honey. These ten combs from several different hives make a full new swarm immediately, and it is an immediately working swarm ready for a surplus story, if you have an out apiary to which to remove it, so as to retain all of the old bees, a queen cell can be given to it in a day or two as queens can be reared especially for them. But under certain circumstances I prefer to have them rear their own queen. For instance: if the swarm is made early in the season, say in June, a mature or cell queen should be given, but when made later in the basswood or buckwheat season, let them rear one. If a queen is given the young swarm at this time she will immediately fill all available space with eggs and nearly all honey gathered will be used in brood-rearing. If no eggs are deposited for two weeks or more, much honey will be stored and the swarm will go into winter quarters with plenty of honey and young bees, for as soon as the queen is fertile she will try her new powers if it is in October. Our first drawing of brood from the old colony can be followed by another drawing in eight or ten days. In our second drawing, brood is taken from the lower story, and eggs and larvæ from the upper story are put in their place below. I

have thus continued the drawing and making increase until the middle of August and had the late swarms store a surplus for winter.

My method of extracting is not materially different from the practice of many others. I advocate extracting as fast as the bees gather the honey; if it is partly capped it is ripened enough. Locality may make a difference in this respect. If the honey is extracted as fast as gathered there is but little trouble from robber bees, and each quality of honey is kept distinctly separate.

My appliances are a Stanley Automatic four-frame extractor. The honey is brought to this on a cart that will carry thirty surplus combs or 150 pounds. My helper will uncap and extract as fast as I can supply the combs. From my honey extractor there is a drop of three feet, and the honey is run directly into half-barrels; for an improvement I shall put in a tank holding several hundred pounds; this will save much straining and give all impurities a chance to rise to the surface.

During the past season I have simplified the work in the apiary so that much time is gained and I have run three apiaries with but little aid. I think the time is near at hand when one man can run several large apiaries with but little help.

Hartford, N. Y., Sept. 12, 1887.

For the American Apiculturist.

THE MARKETING PROBLEM.

W. M. WOODWARD.

A PLAIN WAY OUT OF THE DIFFICULTY.

The strain upon the honey market is effectually relieved for the present year. Perhaps the coming year may not see it so tight as it was the last year; but who can doubt that the tide will turn toward low prices just as soon as ever one good crop is realized? But why bring up the subject of marketing honey now when we have no honey to sell? I answer, *now* is the time to *save our honey market.* Higher prices will be established and it is far easier to maintain prices than to make them. We have found it impossible to make prices. Fair prices will rule this year. Can we maintain them for time to come? To this question let me call the attention of the beekeepers.

HONEY PRODUCERS' UNION.

It has been proposed to organize a "Honey Producers' Union" and establish prices. It never can be done. Beekeepers are scattered everywhere over the whole land. Almost every state now produces a surplus above its consumption. Many beekeepers have families depending upon the proceeds of the apiary for their bread, and such must sell. If they cannot get what they want they must take what they can get. But it has been said the "Union" must prepare to advance money to such on their crops. This it will be found will be dangerous business both to the lender and to the borrower. Let me recommend a thoughtful re-reading of Mr. Norton's article in September number, page 227 of the Api, and to the point that such an argument in the end must fail. Do not understand me that such an organization would be altogether useless; but that the idea of bulling or bearing the market in so general a commodity, so widely distributed, must of necessity be a total failure. If a union can be made of any use to us it will rather be in the way of finding an outlet for our honey in places not fully supplied by the local crop, or perhaps in reaching foreign markets. If beekeepers can be generally induced to work up the home market

both in town and country, and, when their own supply fails, to take orders for some reliable friend, or firm, as through the Union, it will justify its existence.

CURTAILING PRODUCTION.

This plan has been put forward as a means of solving the difficulty. Now, if we live by beekeeping, two elements are necessary to the success of the business: the amount and the price of the product. A large amount strikes directly at the price, and *vica versa*, a large price encourages the larger production. Of the two the larger price would be far preferable were it not for the fatal fact that it inevitably breeds a new lot of beekeepers and thus defeats itself.

Again, it has been urged that the extractor be done away with. As to this it is conceded that the beekeepers cannot be induced to do it. I, for one, do not deem it desirable if they could. Here in the west, and I suppose also in the east, our market is overstocked with comb honey now (*i. e.*, has been) as well as extracted. Add to this the equivalent of the extracted honey crop and who can fail to foresee a ruined comb honey market? Why! prices have already rated at about what extracted honey ought to bring during the last year. Prices for comb honey, a fair article too, have ranged at large, in country towns, as low as ten cents per lb. But, here in the west in particular, the extracted honey does not enter into competition to a greater extent, if as great, as sugars. No one hereabouts ever says "I can buy extracted honey so and so," they rather say "sugar is cheaper."

Working up the home market is one of the things to be done. Do it thoroughly. If you have to peddle, then peddle; it will pay. Besides, I have found honey one of the best things to peddle I ever handled. It sells itself. But we must not only work up the home market to sell our own honey, but must keep it worked all the year round, in order to relieve the strain on the general market. But when we have done all we can in this line, we shall still see a large surplus of honey accumulate to run down prices. Now, how can we prevent this is the main question of which I designed to write.

CONVERTING THE HONEY CROP.

There is yet one resource. We must turn *manufacturers* of such products as can be made of honey. We want, not less extracted honey, but more honey vinegar instead of some of the unwholesome acids now so general on the market.

Fellow beekeepers, let us now turn our attention to *what can be manufactured* from honey and *how it is done;* let receipts for honey cakes and every kind of product be the order of the day. We need not so much to produce less or to give up extracting as we do ways and methods and energy to work up our crops within ourselves into products which command paying prices. But *we must work up our honey ourselves* or take low prices.

Custer Park, Ill.

For the American Apiculturist.

IN-BREEDING OF BEES.

DR. G. L. TINKER.

THE liability to in-breeding is the most serious drawback to the improvement of the honey bee by the ordinary methods of haphazard mating. Nature's remedy for it is runaway swarms, but now man catches the swarms and all are kept in one apiary so that one often has the most objectionable forms of in-breeding. Were it not for the extensive traffic in queen bees and the numerous

apiaries in our land with more or less run-away swarms, the results must be worse.

I find that virgin queen bees do not fly far at any time of the season. Although the thorax of the queen is larger than that of the worker, and no doubt contains more powerful muscles to propel the wings, I doubt if they fly usually over one-fourth mile from the apiary, and often not over one hundred yards away. The drones with their large chests, powerful muscles and large wings, not only fly exceedingly swift, but are able to make long flights, and remain on the wing for three hours at a time without ever alighting once! There is every reason to think that in swarming time, and the warm still days of mid summer, they often fly five miles away and meet queens. In the fall of the year and early spring, I have found that, owing to the cooler air and winds, drones do not often fly over one-half mile. At all events, at such times, an isolated mating station, one mile from other bees, is not troubled with drones of hives at a distance.

In producing my strain of Syrio-Albino bees, late fall mating, the use of drone-traps and an isolated mating station in the country have been the only measures at my command against promiscuous in-breeding. I have found that queens mated to brother drones, and all close in-breeding has proved highly detrimental. The queens lose prolificness and the workers energy. I have, with few exceptions, been obliged to kill hundreds of queens mated in the home apiary during the swarming season; some mismated to undesirable drones from other apiaries, and many from close in-breeding, resulting often in pretty bees but worthless workers. But five years of careful selection of both queens and drones, avoiding all close in-breeding, has accomplished all I could ask, and has shown greater possibilities in the future. I have produced the largest drones and the largest bees I have ever seen. The former have wings a little over $\frac{5}{32}$ of an inch broad and $\frac{9}{16}$ of an inch long. The average black drone, including Carniolans is not over one-half inch long, and few Italian drones exceed this by $\frac{1}{64}$ of an inch. In addition to being large, they have presented every desirable point of beauty and are the offspring of the best working colonies I have ever owned. I only allude to these facts as an encouragement to others in their efforts to improve their strains of bees, and that it *can* be done by well-directed effort. But there can be no success from haphazard mating and other disappointment from close in-breeding.

It has become evident to me that a cheap and practical method of mating queens, to select drones would prove of inestimable value to bee-keepers, and I shall hope that Professor McLean, with the facilities at his command, may be able to find a reliable method. His efforts, already crowned with partial success, deserve the encouragement of all beekeepers.

At present, I know of few queen breeders that are giving the question of in-breeding the attention it deserves. The advantages resulting from the crossing the best strains of unrelated Italians, or of either of the yellow races with each other, is fully as great as in the radical crosses of black to yellow; and the effect of all such crosses is, first, more prolific queens, and secondly, greater activity in the workers.

New Philadelphia, O.

For the American Apiculturist.

THE SEASON IN IOWA. FEEDING BEES.

C. W. DAYTON.

This has been the poorest season for bees known for many years.

Not enough honey for winter stores is the result. Many have asked me if it will pay to buy sugar for the bees, to which I answer, by all means it will, if the bees are managed well when there is honey for them to gather. If they are run in a slipshod manner it would be well, and I don't know but I might say better, to *give* them to some one who can run them as they ought to be run.

I know of no one here who has taken a surplus beside myself and that is not more than twenty pounds per colony. I have heard of no swarming out of 1,200 colonies around. One of my apiaries of fifty colonies cast about twenty-five swarms. It was caused by continuous feeding during the spring. There was not enough honey and pollen in the flowers all the spring to keep up brood-rearing, so I supplied the deficiency artificially, by feeding in the open air in a large shallow pan. I fed to fifty colonies fifty pounds of syrup each day, letting them carry it home the same as though they were gathering from the flowers. It took twelve pounds of honey to ten pounds of water to make the feed the right consistency. Sometimes I gave them a double dose and it was a real enjoyment to hear them roar as they transferred it to their hives and then the music as they were evaporating the water from it in the evening! By mixing so much water with the feed it enables them all to get a taste and be busy.

To have something to do, especially with honey, is what brings joy and encouragement to the heart of the bees, and to increase that quality in the bees with as little expense in honey as possible, I have experimented to find out how large a share may be water and yet the bees carry it to their hives; and, it was found that under certain conditions, they would carry it eagerly where it was only $\frac{1}{8}$ part honey. It must be quite sweet to begin with and to get them started; but after they get the habit of carrying it from the pan, it don't make much difference what it is if it only contains a little honey. I don't think I fed more than three pounds per colony all the spring, yet many of the hives were destitute of honey aside from the feed all the time; and needed the feed regularly to prevent starvation. Where they were fed, I could find large patches of unsealed larvæ, without the feed. I believe there were many colonies that did not average 500 unsealed larvæ in the whole hive, yet they had several pounds of old stores to fall back upon. It is slow business the bees will do at brood rearing when honey and flowers are as scarce as they were last spring, and unless the beekeeper can give them some real encouragement at that time the honey will be scarcer still.

New Hampton, Iowa.

For the American Apiculturist.

FERTILE WORKERS.

A. NORTON.

I don't know whether many persons have observed fertile workers in the act of depositing eggs or not. I have never read of any who had actually seen them. If it is not rare, then the following will be of no interest and you can throw it aside.

The other day, opening a colony which had been made queenless, and the capped queen cells all destroyed, and which I had found a week before to have fertile workers, I chanced to discover the identical ones—or two of them. I found one in the act of laying, crammed

way down into the cell, only the head and part of the thorax showing (the part below the wings being also in the cell), and with wings crumpled against the comb, she presented a comical appearance. She remained motionless for a minute or so, not turning partly around as does a queen. Caught her before she could mix with the bees. She would not sting. Handled her and rolled her in my fingers with impunity for several minutes and she only protruded her sting as a queen will. Finally, she stung me just as I was putting her in a cage. Then I allowed her to run on the comb. Could tell her by her having lost a sting. Bees paid little attention to her, but I observed a faint show of extra respect in the way of feeding, etc. The cell I took her from was literally sprinkled with eggs, but so was every other cell near. Opening another time, I found another fertile worker in the act of laying. She was as long about it as the one before seen. When she finished, I saw her drop two eggs after leaving the cell as you will often see a queen do when she is laying rapidly. This was the only missing link needed to complete the proof. This one I also caught. I induced her to sting me sooner than I did the other. Both of them were just like other bees. They seemed past their prime and were faded and gray looking. Were Cyprian hybrids.

As I said at the outset, this will be of interest or entirely worthless according to whether it has or has not been often seen before. Have not read of it myself, hence I send it for you to do with as you please.

Gonzales, Cal.

[The above is not new but interesting. We have seen worker bees in the act of laying eggs, and others have reported the same experience].

For the American Apiculturist.

PLAINNESS IN COMPOSITION, ETC.

G. W. DEMAREE.

To write plainly is a talent of higher order than to write elegantly. No one can hope to make himself understood in all things by all who may read his writings. What appears quite plain to one person, may be obscure and perplexing to another. The fault then is not always with the writer.

In both law and theology men dispute over the obscurity of language. Were I to take up Brother Porter's article and criticise it, I could point out as much ambiguity in the language he uses in his criticisms as he has pointed out in my article. But all this would be of no earthly use, just as I think Brother Porter's criticism was of no use to anybody. In modern bee phraseology, a hive without frames or combs is properly spoken of as being "empty," and if anybody understood me otherwise it was Mr. Porter. I had just said that the combs were removed from the "old hive" to the "new" one, and "the now empty old hive." Empty of what? Why! empty of the combs of brood that I had just removed. The grammar itself shows this too clearly for any one acquainted with plain English to mistake it. But there is one point that brother Porter has raised that needs explanation, as it may raise doubts in the minds of some persons who have not studied the economy of the bee hive. Following the *direct depletion plan*, of preventing after swarms as practised by me, Mr. Porter asks, "What is to people the new hive and take care of its brood?" I might answer the question by saying, "try it and see." But I might have asked this question my-

self years ago when I was less versed in bee economy than now.

When bees prepare to swarm, the queen is moved by instinct to prepare for her flight with the swarm, and hence she lays but sparingly for several days previous to the issuing of the swarm. And preparatory to the sudden desertion of the brood by the swarm, which may result in a greater or less depletion as the conditions may be, the nurse bees feed the larvæ to last them for several days. Besides, at this stage of things, young bees are cutting out with the greatest rapidity. With these wise provisions of nature, it is easy to see how the new hive is to be "peopled." By my *direct depletion plan*, the swarming impulse is broken at once, and the old colony will be ready for work in the field much sooner than if the depletion is delayed for seven or eight days as when following the Heddon plan. No one would understand me to say that there were no bees left on the combs. Bees do not "shake off" of combs perfectly, as the merest tyro has not failed to observe. The plan, in a "nutshell," is to put the parent colony, immediately after the swarm issues, in the condition of an artificial swarm. This is done by removing the combs from the hive from which the swarms issued, and placing them in a new hive in a new location. But it must be borne in mind that the parent colony is laboring under the swarming impulse, and therefore too many bees must not accompany the combs as there may be danger of an after swarm. The swarm is hived on the old stand so as to catch all the flying bees. I know that this plan works perfectly if the work is properly done, and the entire job is completed at the time of hiving the swarm.

Some may be ready to ask, Why not resort to the shorter way of moving the old hive with its contents to a new location, and hive the swarm in a new hive on the old stand? The reason why this shorter way cannot be relied upon is, the number of bees left at home, when a swarm issues, is very uncertain; besides, bees stick to the combs with queen cells, when under the swarm fever, with greater tenacity than if their queen was present. The bees of a colony under these conditions, if moved to a new location, hive, combs and all, are so absorbed in the one idea of swarming that they hardly realize that they have been moved at all. It is the "breaking up" process that contributes most to the curing of the swarm fever.

So far as I have tried it, Mr. Porter's plan of dividing the combs of brood between the parent colony and the swarm has not worked satisfactorily in my apiary. It has a tendency to cool the swarm energy, and aggravate the swarming impulse. The natural condition of a "swarm" is the absence of brood in its new quarters at the outset, a wise provision of nature to give the swarms entire energy to comb building and honey storing for a season, till the brood needs their attention. I never allow my swarms to have a cell of brood at the start. Brother Porter comes to the defence of the exploded old system of building up weak colonies in the spring, at the expense of the strong colonies. I have no doubt but this feasible looking plan has ruined the prospects of hundreds of apiarists. I was once carried away by its feasibility myself, and the plan hurt my early honey crop till I found out better. If any man or woman ever had a colony of bees "too strong" at the commencement of the early surplus harvest, please "hold up your hand." If you can't hold up your hand, I would advise you to trust to your

strong colonies for your surplus, and let the weak colonies build up into good colonies at their own expense. Perhaps they will be your strong colonies the next year. I am not to be understood that I do not advise the use of brood in necessary cases, to save weak colonies.

Christiansburg, Ky.

From "Gleanings."

CELLAR vs. OUTDOOR WINTERING.

W. Z. HUTCHINSON.

It is a pleasure indeed to discuss apicultural problems with such a man as O. O. Poppleton — one who can lay aside prejudices, and calmly and fairly try to find *truth*. I am glad to note with what unanimity most of the bee-journals and their contributors are dropping personalities — discussing *principles* instead of men.

It is true, that these matters under discussion between friend Poppleton and myself are foreign to the main topic of my little book; but they are important and seasonable.

In regard to caring for bees in the cellar, there may be a grain of truth in what Mr. Poppleton says. If a man wishes to leave his bees uncared for all winter, and go off to the land of flowers, it may be better to protect them thoroughly upon their summer stands. Most of our beekeepers, however, stay at home winters, and to them this question of supervision is not a weighty one. Take my own case, for instance. My bees were kept in a cellar under the sitting-room; hence there was no expense for a fire on account of the bees, or else there was no expense for a fire to keep *ourselves* warm. I presume the majority of beekeepers are situated in *exactly* this manner. And now about the supervision in regard to temperature. We ripped apart, for a short distance, two breadths of the carpet, bored a hole in the floor, and suspended a thermometer by means of a string attached to a cork that just filled the hole in the floor. A rug was kept over the slit in the carpet. Our little girls kept watch of the temperature. It seemed to afford them considerable pleasure to have each one guess what the "tempuchary" (as the youngest one called it) was, and then look and see who had guessed the nearest. The "tempuchary" varied from 40° to 48°; most of the time it was 45°. When we had extremely cold weather, accompanied by high winds, the mercury would sink to 40°. Upon several occasions I kept a lamp-stove burning all night in the hatchway, and burned, perhaps, between one and two gallons of oil. Had there been a double door to the hatchway I do not think this burning of lamps would have been necessary. The mercury reached 48° during warm days upon the approach of spring. Nearly all cellars need a drain, and it is just about as easy to make the drain so that it can be used for a sub-earth ventilator as not. My own cellar drain is so arranged; but I have not allowed the air to pass in through the drain for the last two winters. Do you ask why? Well, I had my doubts as to its benefits; and, besides this, it lowered the temperature. Had the pipe been longer it might not have done so; it is only about seventy feet. I had twenty colonies buried in a clamp last winter. They were put in about the middle of November. A wooden tube, three inches square and about eight feet long, extended from near the bottom of the clamp

up through the covering of earth, and projected four or five feet above the surface. At the bottom of this tube was kept a thermometer, whence it could easily be drawn by means of a string. When the bees were first put up, the temperature in the clamp was 47°. It gradually sank, and in a week had reached 45°. Here it remained until steady cold weather came on, when it again gradually fell until it reached 42°, where it remained unchanged for nearly four months. When the warm days of April came on, it again gradually fell until it reached 42°, where it remained unchanged for nearly four months. When the warm days of April came it gradually rose to 45°, at which point it was when the bees were removed. Now, the bees in this clamp wintered splendidly, and there were no supervision, and the conditions were the same as though they had been in an outdoor cellar. I am aware that some beekeepers use a fire to warm their bee-cellars, and, with some cellars, this may be necessary; but with an underground cellar that receives a steady supply of heat from the earth, fires are wholly unnecessary; and all the supervision that is needed does not amount to anything practically, so far as cost is concerned — at least, not to the man who lives at home winters.

Mr. P. speaks of the "wear and tear" of putting bees in the cellar and taking them out again. I fail to see where there *is* any "wear and tear." He further says, a cellar won't last always, and must be repaired. This is true of some cellars. A cellar stoned up, and under a building, such an one as Mr. Taylor's or Mr. Heddon's, will require no repairs for a lifetime. You, friend Root, speak of the cost of preparing the cellar for wintering bees; that the windows must be darkened; sub-earth ventilation furnished, etc. Candidly, my friend, do you, or does *anybody* know that all these things are needed? Do we *know* that a cellar must be dark? and if we do know it, is it expensive to darken the cellar? Where is the man who *knows* that sub-earth ventilation, or *any* ventilation for a bee-cellar is needed?

Friend P. says there are two "ifs" in the quotation from Prof. Cook; and then in the next sentence he (Poppleton) says, "Chaff hives are safe in severe winters if" (there it is again) "they are properly constructed and handled;" but the really weak point in this part of the argument is found in this sentence: "Many of us older heads have supposed that we had found the royal road to success, and would reach it, too, for a series of years, when some *climatic or food changes* would occur, and the goal would be still ahead." I wish to call attention to the part I have italicized. The two "ifs" in my quotations from Professor Cook are surmountable. We *can* have the cellar right; ditto the food; but in outdoor wintering, those climatic changes are an element of uncertainty, the damages from which can be only partly averted by chaff hives or protection of some kind. In the cellar we can have the conditions the same every winter. I have yet to lose a colony having cane sugar for stores, and wintered in a warm cellar, and by the methods that I now employ I can have the winter stores consist of so large a per cent of sugar, and that, too, in such a position that it will almost surely be used during the winter, and all with so little labor that the damage of loss from unsuitable food practically amounts to but little. It is so slight that I prefer to take the risk rather than to perform more labor and take no risk. I will admit,

that some honey is equal to sugar for wintering purposes; and I sincerely wish that friend P. could give us an article upon the subject of getting good honey for wintering our bees, and also tell us why he thinks that colonies worked upon the top-story plan do not winter so well; yes, and point out "the very obvious reasons" why neighbor Doane's bees did not winter so well as mine.

Yes, friend P., it is an experienced apiarist who can make it pay to spread the brood, if any one can. It is also true, that the time for doing this work comes before the rush of the honey harvest; and I do not doubt that, combined with spring protection, many apiarists might find it profitable; but I feel satisfied that the same results, or nearly as good results, may be secured with no labor; and certainly no beekeeper need spread the brood in the spring, simply for a lack of something to do. What I mean by accomplishing the same results with no labor is, using hives having a brood-nest of such capacity that a queen of ordinary prolificness can and will keep the combs filled with brood without "horsewhipping" her by spreading the brood. We can often increase our profits by increasing the number of our colonies rather than by increasing the average products of those colonies we already possess. In other words, "securing the greatest amount of honey with the least expenditure of capital and labor" does not necessarily mean securing large yields per colony.

I will explain why I consider it more profitable to winter bees upon sugar when raising comb honey. The prices of extracted honey and sugar are very nearly the same, or, at least, they have been; hence the profit could not be very great, while the price of comb honey is twice as great. I am aware that many believe that twice as much extracted as comb honey can be produced, and perhaps this is true in a majority of cases; but those who are well up in the production of comb honey, and employ the best methods, know that they can secure at least three-fourths as much comb as extracted honey.

I feel now very much as though I had had my "say" upon this subject; and I should be very glad indeed to let some one else speak. *Rogersville, Mich., July* 20, 1887.

"From the American Bee Journal."

HOW BEES KNOW ONE ANOTHER.

GEORGE F. ROBBINS.

When I first began to study bee-books and beekeeping, I was taught that bees recognize one another by the sense of smell. I took it for granted that that was true, for that seemed to be the general assumption. After awhile I saw doubts of the theory expressed, and at length decided, from watching the habits of bees, that the view could not be sustained. I have never seen the assumption proven.

My view is, that bees recognize one another more by actions than by all things else. Two facts in bee-nature are well known, first, their senses are far more delicate than ours. They and their little world are so much less than we and ours, that what to us is so infinitesimal as to escape notice, to them is a matter of some magnitude. They can perceive what we cannot, and it may be that in some way we would scarcely imagine all their senses aid in mutual recognition.

Certainly we know that, second, bees know their own home, and that chiefly by sight. They carefully

study their hive and its surroundings; every little mark is cognized and remembered. Now, when a bee enters her home, she knows it; she feels at home and acts accordingly. Her sisters know by the way she acts that she is at home. If she goes into a strange hive, she goes either designedly or by mistake.

Now nature is spontaneous. In whatever form manifested, it wells out as a matter of instinct. A plant or an emotion springs up with the same spontaneity. The man or bee that follows his instincts, shows guilt or innocence — caution or fear. It is generally to be supposed that no bee will enter a strange hive except for purposes of plunder. The bee that seeks ingress to a hive, for the purpose of robbing, knows that she is a robber; she seeks to steal her way with fear and dread. The home bees perceive the signs, recognize her as a robber, and treat her accordingly.

Mr. Schachinger thinks that, after the robber has been successful a few times in entering and leaving a hive, that she can go and come with impunity, because she has acquired the scent of the colony. If so, why do not her sister bees perceive the foreign scent, and, if governed by that in recognizing one another, repel her as an intruder? Likewise, how can she succeed that few times until she acquires the scent? Evidently they do not judge by smell alone, if at all. It is easier to assume that the bee that can walk in as though she belonged there — makes herself at home — can go and come in safety. To attribute so much design to a bee may be assuming a great deal, but bees are certainly creatures of volition. They will, and do. Hence, it is reasonable to conclude since some do enter, load and return, that partly perhaps in obedience to the instinct that prompts her to steal, the bee wills to go into the hive she means to rob, with an air of business and familiarity that disarms the inmates. If there is anything suspicious about her, the home bees simply examine her carefully, she submitting innocently, and if they do not find sufficient evidence of imposture, she is allowed to pass.

But if a bee or bees go into a strange hive with no intention to steal, what then? In certain cases they often do, and generally with perfect safety. It is safe to say that bees never fight except in case one party has reason to regard the other as robbers or trespassers. The entire secret of uniting successfully is to do it at a time or under circumstances when that will not occur. I never could unite two colonies safely at a time when bees are flying. Each party takes the other to be intruders, and they will fight to the death. But on a cool or cloudy day, or in early morning or late evening — any time when bees remain quietly at home — I may unite them in any way I may desire. The fact that no bees are flying—that it is no time to be out—seems to preclude the idea that either party can be intruders. If they recognize one another as strangers at all in such cases, they can at least do so as readily by actions as by odor. But the following examples indicate, if they do not prove, that bees do not recognize one another by scent:

I can put a new swarm into a hive with another colony generally with perfect safety. They know no home, and they go into the hive with the intention to make it their home — not as enemies. I have often known a swarm that issued and then returned to the same hive, in returning to be joined by another swarm and no fighting be done. Young bees out of the hive for the first time, often by mistake go into the wrong hive unmolested. If

I move a hive to some other location, and leave the old stand vacant, the flying bees, when they return and find their old home gone, after soaring around the place awhile, will quietly and safely enter some contiguous hive. They apparently think either that this must be their home, or they will, like the homeless swarm, make it their home.

In the above cases they at least do not act like intruders. We have no certain evidence that they are recognized as foreigners. If they judge by odor alone, strangers would be certainly known as strangers, and promptly met as trespassers.

Mechanicsburg, Ill.

QUERIES.

Answers by Practical Apiarists.

WINTER PASSAGE OVER THE FRAMES.

Query No. 34. Is it a good plan to leave a passage way between top of frames and the honey-board, mat or cushion used to cover the frames? What objection can there be to placing the mat direct on the top-bar?

J. H. J.

ANSWER BY C. C. MILLER.

Yes. Generally bits of comb project above the top bar allowing the bees to pass over, in which case there is no objection to laying the mat on top-bar.

ANSWER BY R. L. TAYLOR.

Yes. Not to leave an open space over the brood frames prevents the bees from having easy access to all their stores and would often cause starvation with plenty of honey in the hive.

ANSWER BY JAMES HEDDON.

Theoretically it is a good plan. It reasons out first rate. On several occasions I have thoroughly tested it on quite an extensive scale, and these experiments showed that it did no good, nor harm.

ANSWER BY H. ALLEY.

I think it is, provided too much space is not left, as that would permit of too much ventilation during the winter. By April 1, the mat should be placed directly on the frames to prevent loss of heat and too much ventilation when the bees commence to rear brood.

ANSWER BY PROF. COOK.

I think so. This certainly gives a readier ingress of the bees to all parts of a hive, when confined for a long period in winter. It is no argument against this that the bees leave no such passage. Bees are natives of a warmer clime where no such passages are needed.

ANSWER BY G. W. DEMAREE.

When I prepare my bees for winter I use pieces of corn stalks split open, laying two pieces side by side across the tops of the frames, and over these go the quilts, etc. This arrangement permits the bees to cross over from one comb to another right where the greatest warmth of the hive is. The objection to having the quilts close down on the frames is, they prevent the bees from passing from one frame to another over their tops.

ANSWER BY J. E. POND.

1. Yes. I have prepared my bees in this way for years, wintering always on summer stands. I give from one to two inches of room over the tops of frames. 2. The objection to placing the mat directly on the frames is that the bees cannot pass freely from one comb to another, unless winter passages are made, and these not only

disfigure the combs, but it is difficult, without spoiling such combs, to make these so-called winter passages, large enough to be of much use. It is an advantage also, to have ample room for the bees to cluster on tops of frames.

ANSWERS BY DR. TINKER.

Yes, but simply a passage — no large space as is provided by the "Hill device." In out-door wintering I use what I term an "under-cover." It is made the same size as the section super and used to cover the same when in use. When the supers are taken off it is placed over the brood frames for winter. It is made as follows: A thin board or a number of pieces of the proper length and width are cleated on top with three cleats one inch square, and cleated beneath at the outer edges with one-fourth inch strips to form a bee space. With this "under cover," no cushion is needed, as the chaff or other packing may be placed upon it to the depth of four or six inches.

In cellar wintering, no bee space over the brood frames is at all necessary. I prefer to lay stout muslin directly on the frames and over it a frame of chaff, *i. e.*, a frame of the proper size with muslin tacked on the bottom and filled with chaff. If two thicknesses of cloth do not intervene, the bees will often eat through and let the chaff down among the combs.

The difference in these modes is that free upward ventilation in a cellar of proper temperature is desirable, but in out-door wintering, free upward ventilation allows the ready escape of enough heat to endanger the life of the colony in a long, cold winter, as the coming winter promises to be.

TOO MANY BEES FOR WINTER.

Query No. 35. I find that many of my colonies have eight and ten L. frames almost solid with brood, and very little honey. Is there any danger that the hive will have more bees than the combs have honey for? 2. If the combs will hold but twenty pounds of food outside those used for brood, and there are bees enough in the colony to consume twenty-five pounds of honey, is there not danger of the colony starving before spring? 3. How would it do to divide those strong colonies about October 1, and place them on six L. frames? would they not winter well if properly prepared?

APIS.

ANSWER BY C. C. MILLER.

1. Yes, unless a good fall flow of honey.

2. Hardly, for there will be considerable honey in the frames of brood. Something, however, depends on plan of wintering.

3. I would not divide, but take away, as they are emptied, some of the frames, leaving six full ones.

ANSWERS BY R. L. TAYLOR.

1. Yes.

2. Yes.

3. It would be best to give the colonies additional stores without dividing; but, if increase is very much desired, colonies as strong as those described could be successfully divided and wintered by a person of experience. Of course queens and additional stores would have to be supplied.

ANSWERS BY PROF. COOK.

1. Despite the general tendency of modern beekeeping thought, I like good large colonies for winter.

2. Then I would see that they have at least thirty-eight pounds of stores; of course, if we have but limited stores, we better use a division-board and then it were better to have smaller colonies.

3. I have wintered nuclei, but there is more risk.

ANSWERS BY JAMES HEDDON.

1. That depends upon how much honey the bees will gather during the time they wind up breeding.

2. In my experience twenty pounds of honey is enough for any colony, and half that if wintered in doors, and the whole ten pound is accessible.

3. I have had good success in wintering small colonies, but very poor success in wintering any that had been manipulated late in the season. October 1 is too late here.

ANSWERS BY G. W. DEMAREE.

1. There is no danger of your colonies being too large. Breeding will cease in time for your bees to store fall honey in the combs after the young bees cut out—for winter stores, otherwise you will have to feed enough stores after the first killing frost, to make up what is lacking.

2. Brooding will cease later on; and, as the young bees hatch, there will be room for winter stores.

3. It won't pay. You will be surprised to see how the size of your stong colonies will whittle down when winter sets in. If you will provide your strong colonies with plenty of stores for winter, they will pay you best.

ANSWERS BY J. E. POND.

1. You need have no fear in regard to the brood; the lack of honey can be easily supplied by feeding.

2. If you feed so that every comb has its upper half filled with stores, there will be an ample quantity. Begin feeding at once, and there will be no trouble.

3. I have never yet seen a colony too large for wintering; you will find on the approach of cold weather that the clusters will call the bees snugly together. Use eight frames in a ten frame hive evenly spaced, and give from one and a half to two inches space over tops of frames and you will find there will be room and to spare, the first cold night.

ANSWERS BY HENRY ALLEY.

1 & 2. I don't think the bees would starve, provided the combs contain twenty-five or more pounds of honey or sugar stores.

3. It would do very well if divided by the 10th of September, giving each colony then one-half the brood, which ought to be not less than three frames each; not three frames full of brood, but the middle portion of each comb of six frames should have more or less capped brood in them, on September 10, and in my opinion they would certainly winter well. It is said that a large colony of bees consume no more honey in winter than a small one; the difference being in the ability of the large colony to keep the temperature at a comfortable point at a small consumption of honey, while the small colony must consume a large amount of honey to maintain the proper warmth to keep from freezing.

ANSWERS BY DR. TINKER.

1. No, the combs will hold at least thirty pounds of food, and not over fifteen are equired to winter any properly protected colony, leaving fifteen pounds for brood-rearing in early spring.

2. As stated, the bees would starve, but by the time the brood all hatches there will be plenty of room for more stores.

3. Very strong colonies may be divided and successfully wintered, but I do not think it advisable to do so. The reason that very strong colonies do not winter as well, usually, as average sized ones, is because of insufficient ventilation. Very large colonies of bees in winter are too warm, do not cluster and are unable to hibernate. They wear themselves out in constant activity and by the time spring comes are not so strong as the colonies that were able to hibernate. The proper solution of this question was first made known to the public in my article on wintering in the October number of the

APICULTURIST for 1886, to which the reader is respectfully referred. Since that time Prof. N. W. McLain of the U. S. Experiment Station has confirmed my position after many observations and well conducted experiments on bees in winter quarters. Under the Professor's able management, the Experiment Station is a success as every report from his hand of new and valuable discoveries amply demonstrates.

QUEEN WITH PARALYZED LEG.

Query No. 36. I have a fine queen, very beautiful and large. She came from a cell taken from one of my best colonies when it swarmed. She is now in a nucleus. Was looking at her and saw that one hind leg was useless. This defect does not seem to impair her fertility as I noticed that there were eggs in every cell.

1. Will the bees in a full colony accept her? 2. Would they be likely to supersede her on account of her lameness? 3. Would you hesitate to introduce her?

NOVICE.

ANSWERS BY R. L. TAYLOR.

1. Yes. 2. Yes. 3. I would not use her except as a makeshift.

ANSWERS BY C. C. MILLER.

1. They have accepted such a one for me.

2. I think not.

3. No.

ANSWERS BY PROF. COOK.

Yes, so long as she is prolific I think they would. I do not think they would try to supersede her, so long as she is a good layer, and so I should not hesitate to introduce her.

ANSWERS BY H. ALLEY.

1. Yes, the bees will accept such a queen; but I dislike to introduce a crippled queen.

2. In some cases the bees might supersede her, but will not as a general thing.

3. Would use such a queen if all right otherwise than lame leg, and no others were at hand.

ANSWERS BY JAMES HEDDON.

1. Although this queen may be a good layer and if very carefully introduced be accepted, I think that any physical imperfection increases the danger of her being destroyed by the workers.

2. Other things being equal, bees are more apt to supersede a queen having any deformity.

3. I would try introducing her if I needed her.

ANSWERS BY J. E. POND.

I don't think the useless leg will cause the bees to reject her, and do think they will accept her as soon as another whose legs were all right, and not supersede her on that account alone.

I should not hesitate a moment about introducing her, unless I had a perfect queen equally as good. If I did not have as good a queen that was perfect, I should certainly hang to this one for the present.

ANSWERS BY DR. TINKER.

I have had two queens that had paralyzed legs from being stung. One had two limbs so paralyzed and subsequently mated; both were ordinarily prolific and the bees showed no inclination to supersede them. Bees in full colonies do not so readily accept such queens, though once accepted they are not likely to supersede them on account of the lameness. I would not hesitate to introduce such a queen if she was otherwise valuable.

ANSWERS BY G. W. DEMAREE.

Queens sometimes get one or more of their limbs paralyzed in their conflict at mating time. It may be caused by the bees "balling" her, and I knew one case where it was done by a conflict with a rival queen. The two or three queens I have had in that condition were as prolific as other queens but

were superseded in the course of a year.

1. Yes: if she is properly introduced.

2. They will finally supersede her, but I have had them to do good service first.

3. I would not, if I really needed her service.

GRANULATED CORK FOR WINTER PACKING.

Query No 37. Mr. G. B. Dodge of Lancaster, Pa., has used "granulated" cork for winter packing. Is such a material as good an absorbent as sawdust or chaff? Will it retain the heat as well as other packing usually used in winter?

G. P.

ANSWER BY R. L. TAYLOR.

I have had no experience with cork.

ANSWER BY PROF. COOK.

I can only judge from what I know of cork. If the cork is cut fine I should expect it to be admirable.

ANSWER BY JAMES HEDDON.

Yes, it is the best of an absorbent; and, if cut fine enough and closely packed, a splendid non-conductor of heat.

ANSWER BY C. C. MILLER.

I have had no experience in packing to amount to much, but have heard ground cork highly commended by successful Canadian bee-keepers.

ANSWERS BY DR. TINKER.

Theoretically, granulated cork next to sheep's wool is the best winter packing for bees; but, in practice, good chaff and dry sawdust are found quite as good.

ANSWER BY G. W. DEMAREE.

If the cork shavings are fine enough, they have no equal as an absorbent, and they will retain heat as well as any other like material.

ANSWER BY J. E. POND.

It is a good material for the purpose, but no better in my opinion than chaff or sawdust. I find as good results from use of a dead-air space, as with packed walls.

ANSWER BY H. ALLEY.

Cork, it seems to me, must be a much better material for winter packing than any other material I know of. The objection I have to sawdust, shavings and chaff is that if the smallest crack is not closed the water will enter and wet the packing long before spring. I had all the experience in that direction I wanted last winter. The above materials are too much of an absorbent for the purpose for which they are used. Cork, it seems to me, will not act as an absorbent, and yet it is a non-conductor of heat and cold, if I mistake not; it should be considered the best, if not the cheapest, material to use for packing bees.

The American Apiculturist.

Published Monthly.

HENRY ALLEY,
MANAGER,
WENHAM, MASS.

TERMS: $1.00 PER YEAR.
SEE INDUCEMENTS TO SUBSCRIBERS.
Wenham, Mass., Oct. 1, 1887.

THE MANAGER'S CORNER.

OUR VISITOR.

After a long and unusually rough passage, Mr. Ivar S. Young landed in New York on Sunday, Sept. 4. Being delayed there several days on account of his baggage he did not reach the Bay State apiary until Sept. 8.

Mr. Young is, probably, the most

prominent beekeeper in Norway, and is editor of the only bee paper published in that country. His visit to America is to learn our method of beekeeping, and he comes not only on his own account but in the interest of the Norwegian government.

Mr. Young arrived at Wenham at noon time, and as soon as we had taken in a good dinner we were ready for business. After spending a while in the office talking over bee matters, we soon discovered what points our visitor was most interested in, and at once went out among the bees.

We regret very much that Mr. Young arrived so late in the season, as we had but little to show him about our method of rearing queens, as the cell-building season was over. Nevertheless, there was a large number of our beautiful queens in the apiary, and hive after hive was opened until brother Young said, "You shall open no more, I have seen enough."

Mr. Young expressed his pleasure at what he had seen and learned while here. We could hardly make him believe that the bees he saw were Italians as he had never before seen any so beautiful for he seemed to have an idea that the Cyprian and Syrian races were the handsomest bees known.

Mr. Young speaks quite good English, but said he could better understand us than some others he had met, as most of the Americans speak so rapidly he could not interpret as fast as they talked. Mr. Young left here for Niagara Falls, and after spending one day there intended to visit the Exhibition at Toronto, Ca. There he would meet the prominent beekeepers of Canada, also Mr. Cowan, editor of the B. B. J.

Mr. Young spoke of the little tilt between D. A. Jones and Mr. Newman, regarding his visit to American beekeepers and laughed heartily over the matter, remarking at the same time that he supposed that he had included Canadian beekeepers with American beekeepers.

From Toronto, Mr. Young will go to Chicago, thence to Minneapolis, Minn, to visit a brother. On his way back a visit will be made to Mr. Heddon and other prominent beekeepers at the west whom he can reach readily. On his return to New York, Mr. Young will visit the Knickerbocker bee farm, Aspinwall and Treadwell, and Mr. L. C. Root at Stratford, Conn., also the apiary of Mr. Cushman at Pawtucket, R. I., as Mr. Young, on his arrival at our place, found some very cordial invitations from most of the above named parties to visit them.

Mr. Young is a very large man, should say he would tip the balance at about 300 pounds, and is more than six feet high. As a smoker, Mr. Young will find but few rivals in this country. When he visits our good friend Root at Medina, and takes out the old pipe, and gets up steam, we kind o' imagine that we can see brother Root going for one of those bellows smokers and presenting it to Mr. Young on condition that he quits smoking. We would be willing to bet a small sum that brother Root has not smokers enough in his extensive establishment to induce friend Young to throw away that old pipe. If the writer could enjoy and take so much comfort in smoking as Mr. Young seems to, we would smoke. Our friend and visitor no doubt finds more pleasure and comfort in smoking now while he is 4,000 miles from his family and home, than ever before. Who would care to deprive a man of such comforts under the circumstances.

We assured our distinguished visitor that he would receive a most hearty and cordial welcome from all the beekeepers whom he could visit. Beekeepers are noted for the cordial and brotherly feeling existing among the bee fraternity.

A STROLL AMONG THE HONEY DEALERS OF BOSTON.

On Saturday, Sept. 10, we were in Boston and took a notion to go among the honey dealers. I must confess that, after reading all the reports in the API and other bee papers of a failure of the honey crop, I was much surprised at what I saw.

We saw in one store about seven tons of honey in nice 1-lb. sections from beekeepers in Vermont. Some of the crates were marked "Light Weight." These crates I found contained sections which were not quite filled, and, in ordinary years would not be sent to market. All the first-class honey was in splendid condition and very fine. The apiary of A. E. Manum, of Bristol, Vt., was well represented by the large lot of fine honey. We concluded that brother M. had but little time the past summer to spend in mourning over the failure of the honey crop.

The prices, also, surprised me as much as the quantity and quality of the honey. The second quality is selling at wholesale at 18 cents, and the best section honey at 22 cents, and is retailing at 25 cents per pound. Not a very heavy boom in honey after all. The demand for honey is fair but not brisk. We are of the opinion that prices must advance in the course of a few weeks, as nearly all the honey, we learn, is on the market, and long before spring the entire crop will be sold. Therefore those who have forced their crop on the market will be losers to a considerable amount.

An experiment.—For a long time we have been thinking to test the matter regarding the length of time a bee would live after its sting was extracted, If the fact has been stated in any book or other publication, it has never come to our notice, so we concluded to test the matter ourselves. Accordingly, the sting was removed from seven bees with no apparent injury at the time. All the bees were bright and lively from noon till we had retired at night. The next morning two of the number were dead, but the five remaining alive were active and seemed all right. On the second morning all had died but one bee; and although that one seemed as smart as ever, it soon died.

These little experiments, although of no account, add to the general fund of information and facts, concerning the honey bee. We intend to try some further experiments in this same direction. One is to remove the sting from a number of bees, and then give them a strange queen. Should think it would be kind of funny to witness some stingless bees trying to sting a queen bee.

When the bees find they cannot sting a queen they will try to bite her. We have often been stung and when the bee found it could punish its victims no more by stinging, then it would try and bite.

Generally, when a bee has stung some one it seems to appear as though it had done something it was ashamed of. The fellow who gets stung don't feel that way. He generally makes a few remarks which indicate that he is mad clear through. To what use could a bee put his sting unless he can find a fellow's nose to insert it in? We have been stung so many times that we rather like it. Everybody would keep bees if it were not for the stings and we poor fellows who publish bee journals would be worse off than now.

The Apiculturist.—When we took charge of the API in August, 1886, we did so under circumstances most discouraging. We never had had much experience as a publisher, but we thought that as *manager*, the API," if rightly conducted, could be made to pay its running expenses at least. Well, under the present management the API has appeared for fourteen months; and with one exception every issue has been placed in the hands of its readers on the first day of each month and so it will continue to appear as long as its hosts of friends help us to do so. Our subscription list has more than doubled within a year, and although the profits derived from the API are small, yet we are content with what we get.

Several persons who had predicted that the API would soon be numbered with the things of the past, have had reason to change their minds. Somehow we have got along very well without their aid. One man, and an old

friend of the API, has stated in a public letter that "Mr. Locke published the best bee journal ever published in the history of the past." Well, the API was first-class and no mistake, but, if the opinions of some of the foremost beekeepers in the world (and we know they are competent to judge) are of any value, the API is far ahead of what it formerly was. Now, the present manager only claims credit for this in the choice he has made of the contributors.

We never did approve of publishing the old history of bees, such as may be found in the columns of the API of several years ago. Our readers want something new and fresh every issue; we have given it to them.

We shall now have more time to devote to the API and hope to make still further improvements in its general make-up.

Mating queens in confinement.—We can see no good to come from the experiments which Prof. McLean is conducting in order to have queens mated in confinement. What is to be gained even could it be shown that queens can be mated to any drone selected?

The manager of the API has been rearing queens nearly thirty years, but no trouble has been experienced by us in getting queens mated in the open air, by the drones from any particular queen desired. Since the advent of the drone and queen-trap we have perfect control of both queens and drones. With the use of the traps, hundreds of colonies of black bees may be kept in the same apiary with a few colonies of pure Italian bees, yet not one of the young queens will be mismated. If a person has plenty of time and money he can afford to waste in such useless experiments, it is well enough to enjoy such a pastime, but we see no real practical advantages to come from such experiments. It is to be hoped that Prof. McLean will not waste much valuable time in trying to find some way to have queens mated in confinement but will turn his attention to something that will benefit the beekeeper.

Notes and Queries.— Well, Bro. Root has come in and joined those other bee journals who have adopted the improvement method of the APICULTURIST. Mr. Locke has said that the API was the first in the field with a "Note and Query" department. No one has disproved this statement. It is a big thing, don't you think so, Bro. Editors?

"Gleanings" is doing the thing well, but it has too many replies in yes and no style. Yes and no do not, as a general thing, explain questions on bee culture to the satisfaction of all. When you say yes or no, give your reasons for not doing or for doing such things.

Can't some of the other bee journals follow the API in other respects besides the "Note and Query" department? Bro. Jones permitted some one to use several columns of his paper for abusing a brother editor in Canada. We don't claim that it is any business of the manager of the API, but we will say that when we cannot find anything but personal matter to fill our journal, the API will not be issued till something of more importance comes in. If anything can disgrace a publication of any kind, it is articles reflecting on some person.

Bro. Jones, you know, does not feel kindly towards the "Canadian Honey Producers." Let your motto be "Live and let live," Bro. Jones.

Fine Bees.— We have one colony of the most beautiful bees that can be found. The combs at this date (Sept. 5) are solid with brood and the hive is very full of bees. The queen is one year old, very large, handsome, and one of the *best* breeding queens that ever graced the Bay State apiary. This queen brought a colony, containing not over three pints of bees through the winter of 1886–7, and on the summer stand. We have taken nearly 100,000 bees from her colony since June 1, and also have reared 300 queens from her beside. If perfection can be claimed for a queen it can for this one. To-day the weather is beautiful and the bees are gathering honey from golden-rod. I took a notion to remove one of the middle combs from the hive, and did so. Not one bee took wing nor seemed to be disturbed in the least. We have introduced twenty *young* queens from the queen in question, and they seemed to have inherited the qualities and characteristics of their mother.

Where this particular queen came from, we know not. In August, 1886, about three quarts of bees were found clustered upon the ground in my garden. They were hived. While the bees were running into the hive we noticed

two fine fertilized queens and the one described is one of the two.

If more beautiful and docile bees can be found we should be glad to have a look at them. Those of our customers who received queens of this strain were fortunate, as they have something fine. We have at this date (Sept. 5), about forty of her daughters, and about 200 other queens. This strain is so much different from any other in shape and color we have, it is an easy matter to select them when putting up queens. We still have other strains that it is hard to equal. One queen in particular is worth mentioning. A nucleus reared a queen which was very fine in appearance; she was introduced to a full colony. Her worker progeny are now hatching. They are beautiful to look at. The price we set upon such a queen is $100. Our customers will get something from her next season that will make them laugh right out. This queen is not for sale. Don't send your check for $100 thinking you can get her.

Sorry that space will not allow a description of about fifty other queens in our apiary, all of which are of the best in every point that goes to make a first-class queen.

Those of our readers who think we are boasting have a cordial invitation to call and look over our bees. If we cannot back up the above statements, we will give any one the privilege to say so in the API. Our strain of Italians for beauty, prolificness and working qualities cannot be equalled in the world. We mean it.

The Price of Honey is booming. Well it might, as but few beekeepers have any honey for sale. The boom in prices is of little account; nevertheless, the failure of the honey crop will have a wholesome influence upon the market and price of honey for several years. When honey is plentiful and cheap, a customer pays the price and says nothing. Now, when one steps up and calls for a package of honey, he will be surprised to know that he has to pay nearly double for it that he paid in years past. "Why is this?" they will inquire. "Where does honey come from?" "How came the crop to fail?" etc. It will open their eyes. Many people who never knew where honey came from, will learn something about it this year. Many people who eat honey think it is obtained from some kind of fruit, and is pressed out the same as cider is from apples.

We have no doubt that the experience of this year will teach people to appreciate the value of honey better, and that in consequence thereof, better prices will prevail in the future. It is "an ill wind that brings good to no one." Let us all be thankful for what we have had and enjoyed from our bees, and let us look forward to the season of 1888, when, no doubt, all will be made happy again by an abundant honey harvest.

It has come. — Vol. 1, No. 1, of "The Poultry and Beekeepers' Journal," published by the "Sun Publishing Company," came to hand a few days ago. We have looked it over and think it is a pretty good thing, and we are well pleased with its contents. It strikes us, however, that it would be as well for the success of the publication should the name of some one connected with that new bee paper be published therein.

Subscribers and readers generally have a desire to know who is editor, manager or proprietor, and who is responsible for the contents of any publication. We have no doubt that the Sun Publishing Company is O. K., — but who is at the bottom of it?

In-breeding of bees is one of the queries sent to the API. The answers are quite lengthy and most interesting and are from the pens of Prof. Cook, R. L. Taylor, James Heddon, G. W. Demaree, J. E. Pond, Dr. C. C. Miller and by the Manager.

This query was crowded out of the present issue, but will appear in the November number.

The Apiculturist for September came a few days ahead of time. Under the able management of Mr. Alley it improves each month. So far as valuable matter is concerned, it is one of our best apicultural periodicals. It is well printed.—*American Bee Journal.*

No frost has visited this vicinity up to date (Sept. 20) and the fall flowers are as bright and flourishing as in August, though the weather has been cool all through the month.

Eighteen hundred pounds of sugar and several hundred pounds of honey have been used in the Bay State Apiary since July 1, 1887. Our bees were fed sufficiently to take them through the winter by Sept. 18. We believe in feeding early.

Golden rod was in great abundance from the last of August to October 1. The bees gathered from it more or less each pleasant day, but many cold and rainy days prevented them from getting enough for winter.

Our hives are full of bees and finer colonies cannot be found. So say all our visitors. Call and see them.

QUEEN-BEES TO CANADA.—A correspondent writes us a complaint that the postmaster at Detroit has returned two packages (containing queen-bees) for insufficient postage when they were to be sent to Canada and stamps had been placed upon them, the same as required for the U. S. postage. Our correspondent is at fault, and as others may be misinformed we make this explanation. Queen-bees have to be sent to Canada as merchandise, and according to the law, it requires ten cents postage on every package weighing eight ounces or less. As the postage must be prepaid, the postmaster at Detroit was required to return them, or retain them and let them die.—*American Bee Journal.*

[We have sent a large number of queen bees to Canada this year, but have paid only four cents postage on each queen. The postmaster at Suspension Bridge returned the first package of bees put up and sent as merchandise on which ten cents for each eight ounces had been paid. We were informed that queens would not go when thus packed and further informed that the cages must be placed in envelopes the same as a letter and then they would go all right. Since then we have packed queens as instructed and all have been delivered safely to our Canadian customers. We pay letter postage on the packages, which amounts to four cents per queen.

It really looks as though the postmaster at Suspension Bridge was of more importance than any other man connected with the postal department of Canada.]

Mr. Ivar S. Young, in his letter to us and other editors says: "I am going to visit the first and greatest beekeepers of the world—the Americans—in order to study practical beekeeping." We did not state his language in our notice on page 435, but the *Canadian Bee Journal* did so, and its editor remarks thus:

"While he may consider the Americans the greatest beekeepers in the world, we hope to show him that the Canadians can make a much finer display of their product. Before his visit is over, we expect to be able to hear him say that he should have coupled Canada with America in the statement which he has made."

The following is just received from a subscriber of our Canadian contemporary, and fully explains itself:

"FRIEND NEWMAN:—What is the matter with D. A. Jones? Is he jealous or crazy? See page 350 of the *Canadian Bee Journal* for July 20. Is not Canada *a part* of America? His talk is *utter nonsense*, and tends to make 'hard feelings;' like the 'Canadian linden honey and United States basswood article of a year ago. I do not like such talk."

Bro. Jones is at fault in his knowledge of geography; that's all! He evidently thinks that Canada is *bigger* and of more importance than the whole continent of America; when in fact it is but a *small* portion of that continent. The article about "Canadian Linden Honey *vs.* American Basswood" was, no doubt, a great *blunder!* as was the naming of his paper? But we must overlook such little things in him. It is his nature to be *impulsive*, and to make very *inflated statements*. We do not think he intended to be discourteous to the apiarists south of the great lakes, even though his language made it so appear.

That Canada obtains a good crop of honey; that it is of excellent quality; that they make grand exhibits; and that they have some of the best apiarists of the world, we freely admit, without even a thought of jealousy, or feeling of envy! And when Americans are referred to as "the greatest beekeepers of the world," as they are by Mr. Ivar S. Young, we never think of depriving Canadians of their full share of the honor; or imagine for a moment that they desire to secede from the rest of the Continent, or wish to detract from the glory and reputation of America, or American apiarists.—No! We all say most enthusiastically—

"No pent-up Utica contracts our powers;
The whole unbounded continent is ours."

[The foregoing was taken from the *American Bee Journal.* We are not going to be so sparing of our modesty as Bro. Newman, but will claim that the beekeepers in the United States are far ahead of those in any other part of the world, and we do not intend to make any exception, no, not one — and we shall include all parts of the business, from a patent bee-hive to publishing bee books and bee journals, Who has ever made any very great improvement on the well-known Langstroth hive? who publishes better bee journals and better bee books than are published in the United States? Who has ever produced more honey to a colony than a beekeeper of the state of Texas? Where can be found more successful beekeepers than Doolittle,

Manum, Hetherington, Elwood and thousands of others we might mention?

No, the Yankee beekeepers do not make such a big public display of their products as do some others, but they have the honey just the same. When, in New York city a few years ago, we saw piled up in one room sixty tons of honey, all in prize packages; to us it was quite a show. It might look small to other people's eyes. There was no great excitement in that locality, and no one seemed to be boasting about how much honey he could raise per colony or in one year.

The fact is, the Yankees have as good hives and facilities, generally, for raising honey as any beekeepers in the world. When there is any honey to be had we can get it. When the flowers yield none, we go without it. The present is one of the years when we go without it. We guess Bro. Jones has discovered that the Dominion of Canada is in North America.

INFORMATION WANTED.

M. M. BALDRIDGE.

On pages 227 and 228, September number of the "API," I find a four column article on the "Price of Honey," in which the writer says — "The question of selling honey, like all questions vital to industrial or political economy, is a hard one about which to agree. And, in the discussion of this question, we find all kinds of ideas coming before us, and many theories urged as certainties, when in reality they are only fancies. One of these is the belief that producers can combine, withhold the supply and advance the price."

Now, will the party who wrote the foregoing be so kind as to tell the "API" readers who has even advanced the idea, in any bee publication that "producers can combine," and "withhold the supply," and thus "increase the price" of honey? Please give us the name of just one advocate and where he can be found. Unless this can be done, it seems to me that two pages of the "API," are altogether too much space to be wasted in the discussion of a *theory* that exists possibly only in the imagination of your California correspondent.

St. Charles, Ill.

PROF. COOK'S HOUSE FOR THE APIARY.

R. L. TAYLOR.

IN almost every essential respect I think Professor Cook's plan of a "House for the Apiary" to be correct. I cannot suggest anything that would improve the cellar for the safe wintering of bees, unless it be that the grouting of the cellar floor be omitted. Does not the bare earth absorb much of the impurities thrown off by the bees and so keep the air sweeter and purer? The only other thing about the bee-cellar, to which I wish to direct attention, is the little cistern in the apartment for the bees. I have considered how Professor Cook expects to get compensation for the expense of building it by any advantage to be derived from it.

To the plan of the shop and honey-house I have three objections to make:

1. If I understand the Professor's plan for preventing bees from entering the honey-house by the windows, without preventing those inside from going out, I must say it proved a failure with my bees.

2. If one is to have as many as one-hundred colonies, the division of the honey department into two rooms would be a serious mistake. The division wall will surely be in the way.

3. But, in my opinion, the most serious defect in the plan is its failure to call for outside walls as nearly as possible impervious to the outside temperature. The heat

of the summer sun can be very well got in by the doors and windows but only thoroughly good walls will keep that heat in during the cold nights of late summer and early autumn. So even if no stove is to be used I should have good thick walls; but if a stove is ever to be used for heating purposes I should certainly want them to keep the heat in. On this point see my article on page 196, August number, current volume of APICULTURIST. *Lapeer, Mich.*

MR. COWAN'S VISIT TO AMERICA.

DEAR MR. EDITOR:

We have been honored by a most pleasant visit from Mr. and Mrs. Th. W. Cowan. I cannot express the pleasure and profit I have derived from Mr. Cowan's stay with us. I have long known of Mr. Cowan and appreciated very highly his ability and learning. Hereafter, there will be coupled with these as great an admiration for him as a man. Our entire family, even the children, have found every minute of Mr. and Mrs. Cowan's stay with us, a delight. There was only one unpleasant feature, the week was so short.

Mr. Cowan is not only one of the best—I think the best, living authority on bee literature and the bee industry, but he is at the same time an expert microscopist, and a very fine botanist. Add to these the entire absence of ostentation, and you describe Mr. Cowan. His visit is certainly a red letter day in American apiculture. How fortunate it is that one of the best and most influential bee journals in the world has so wise, so competent, and so courteous and gentlemanly a man for its editor!

A. J. COOK.

[We hope Mr. Cowan will not consider the above a sample of American taffy.—ED.]

FOUL BROOD.

The *British Bee Journal* of Sept. 8 contains several articles upon foul brood. The editor, in commenting on those articles, says:

"Now, so far as our knowledge at present extends, *i. e.*, according to our present light, stamping out by reducing to ashes every contaminated hive, comb, or other article, and destruction of the diseased bees, would seem to be the only safe plan of dealing with this dire pest, which is already decimating our apiaries, and bids fair, if strenuous means are not adopted, to stamp out English apiculture itself at no very distant date. Has Mr. Cheshire no word of comfort for us? Why is he silent so long? In our opinion the fell disease will never be conquered by change of queens, phenol, salicylic acid, nor by any other known remedy. Our advice would therefore be 'Stamp it out, as the *Rinderpest* of apiculture.'

We recommend the perusal of an article on this subject entitled 'The Creatures we Breathe,' by Dr. Percy Frankland, published in the August number of the '*Nineteenth Century*.'"

[The above meets our views exactly and is just what we have advised for twenty years past. It is the only way to treat such a disease if it is to be annihilated. Don't hesitate one moment to apply the fire.]

Union Convention at Chicago.—The North American Beekeepers' Society and the Northwestern Beekeepers' Society will meet in joint convention at the Commercial hotel, cor. Lake and Dearborn streets, in Chicago, Ill., on Wednesday, Thursday and Friday, Nov. 16, 17 and 18, 1887. Arrangements have been made with the hotel, for back room, one bed, two persons, $1.75 per day, each; front room, $2.00 per day each person. This date occurs during the *second week* of the fat stock show, when excursion rates will be very low.

GLEANINGS FROM CORRESPONDENCE.

Mulberry, Pa.

AM. APICULTURIST:

Our honey flow was short and sweet. Last winter two-thirds of all the bees in old gums and boxes were killed by cold. The spring was late, but my bees were in fair trim for the fruit blossom which amounts to some section honey with us by proper management and good weather. The fruit blossom came and was immense; every twig was loaded with blossoms and filled with nectar. Bees worked at it about two good days and filled the brood-chamber, when it began to rain until the fruit and fruit blossoms were all ruined. No fruit now. Next came the locust and full of nectar too, but the bees hardly got started when the cold rain began again and continued nearly two weeks. By this time, the fields were covered with white clover, but it was too cold for the honey to secrete. After the rain was over and it grew warmer, we had *seven* days on the white clover and such a white clover honey shower I never witnessed in this part of Pennsylvania before. Then the white clover was at an end and the bees have hard work to keep even ever since. During that short honey flow I doubled stock and secured twenty-five pounds of honey per colony. We may get a good fall flow from the asters, boneset, etc. Honey is beginning to come now from catnip, horsemint and various other flowers. Most persons who did not encourage their bees in the spring, by stimulative feeding and protection, secured no surplus whatever. We had very little of the great drought of the west but still the season was very unfavorable for the bees.

L. W. LIGHTY.

Lake George, N. Y.

MR. ALLEY:

The queen I got from you last year was the best one out of all I bought of other dealers. They are very gentle, and the best honey gatherers I have yet had.

Yours,

F. A. LOCKHART.

Pine Plains, N. Y., Aug. 17, 1887.

Dear Sir:

The honey crop in this section is almost an entire failure on account of the extreme drought. In June, clover yielded but very little honey, and now we are having so much rainy weather, together with cool nights, that we shall get no surplus from buckwheat. Poorest season I ever saw.

Yours respectfully,

G. H. KNICKERBOCKER.

Ridgeway, Ont.

The honey season of '87 was like some young men of the present day: promised well, but did'nt pay worth a cent. The drought which was general from Hudson Bay to the Gulf of Mexico cut short what would have otherwise been a splendid crop. Abundant rains, however, for the last few weeks will insure a fair supply of fall forage. perhaps enough for winter stores.

G. F. DUNN.

Dundee, Mich.

FRIEND ALLEY: The queen I received from you came through all right and she is a daisy and you may expect my orders for next season's queens.

The queen and drone trap is perfect in all the points for which it is designed. Go on, Brother Alley, and help on the cause of apiculture.

Respectfully,

D. C. BUCK.

Fort Wayne, Ind.

HENRY ALLEY.

Dear Sir:

Please send me a sample copy of the "AMERICAN APICULTURIST" and oblige. The honey crop is a failure in this section and there are lots of bees that will have to be fed or they will starve the coming winter. This is my first season and I feel a little discouraged.

E. A. MILLER.

Corning, Iowa.

MR. ALLEY.

Dear Sir:

Received queen all right. I introduced her and she is laying. She is the first queen I ever saw. Have also received API.

Yours respectfully,

JAS. A. RUSSELL.

Orangeville, Aug. 25.

MR. ALLEY.

Dear Sir:

The queen I received in June from you is giving the very best of satisfaction; was laying the second day after I received her. Every person that sees her bees says they are the nicest bees they ever saw. She came in good time and I am well satisfied with her.

Yours very truly,

WM. J. ROBINSON.

Davenport, Ia.

HENRY ALLEY, ESQ.

DEAR SIR:—The queen you sent me was duly received and it is a nice one; so say all beekeepers who have seen her.

I had no trouble in introducing her. The bees could not help liking her, she is so nice. Of course I have not seen any of her progeny yet, but if they are as nice as she is, it will do. I find I have another queenless colony. Please send me another nice queen at once.

M. D. HUGGINS.

Prophetstown, Ill.

MR. HENRY ALLEY.

Dear Sir:

The honey crop is a failure with me. I put forty-five colonies in the cellar last fall and put out forty-four in April in good condition. They bred up early in May and used up all the honey they had. I commenced feeding a few in June and fed regularly twice a week through July. I intend to increase the feed about the middle of August to get them in condition for winter. We have had the most extreme drought we ever saw in this part of Illinois.

WILLIAM HILL.

South Middleton, Ont.

MR. ALLEY:

The queen I bought of you two years ago is the best I ever saw.

JOHN A. WILSON.

Richland Centre, Wis.

AM. API. Honey crop *very* light in this part of Wisconsin. From 147 colonies, May count, we secured but 3,000 lbs. extracted and many have not done so well.

R. R. HOLBROOK.

Milford, Pa.

MR. ALLEY.

Dear Sir:

The six queens you sent me are very nice. They reached me in just four days from the time I sent the order. Please accept thanks for promptness. I introduced them according to directions found in the "Beekeepers' Handy Book," and think they are all right.

RUSLIN DEWITT.

Newark, New Jersey.

FRIEND ALLEY:

The two queens you sent me are so beautiful and large and keep their hives so full of bees, that they look like little lumps of gold when flying and sporting around the hive, and are such good workers and winter so well that I have concluded to try more.

Yours,

CHAS. H. THEBEROTH.

Reinersville, Ohio.

MR. ALLEY:

Bees did reasonably well here up to July 15. I took from forty to forty-eight pounds of comb honey to the colony. Bees seem to be gathering honey briskly the last few days and a great deal of pollen.

G. A. GOLDEN.

Hutchinson, Ky.

MR. ALLEY:

I like your paper better than any I have ever read.

J. N. S.

St. Charles, Ill.

FRIEND ALLEY: Thank you for the "API." I read every number as soon as received and find many things therein very instructive. You have a right to feel proud over its contents. Success to you. Truly yours,

M. M. BALDRIDGE.

[We have known the writer of the above upwards of twenty-six years and have always considered him one of the best writers upon apicultural matters. Merely to say that we appreciate such a testimonial as the above does not ex-

actly express our opinion. We often get words of encouragement from Professor Cook, Dr. G. L. Tinker, James Heddon and from hundreds of our readers, but somehow, we consider the one from Mr. Baldridge the best of all.]

Bristol, N. H.

MR. ALLEY:

Herewith find $2. Please send me the AM. APICULTURIST and your Handy Book on Queen-rearing. I have bought several bee-books. They all tell how to rear queens; but not one of them tells how to keep the queens after they are reared, until wanted to use or sell. Do the authors think because they know how to do it, everybody else ought to?

G. B. SANBORN.

[We have often told the readers that the Beekeepers' Handy Book would tell them more about queens and queen-rearing than all other books combined. Mr. Sanborn will find this out.]

Edgar, Neb.

HENRY ALLEY.

DEAR SIR:—The drone trap received and works all right. This has been a poor season here for honey. Too much dry weather; but the bees are doing well now.

When can I get some of the Bokhara or sweet clover seed (*Melilotus alba*).

Respectfully,

EZRA E. HOWARD.

[Any one who can supply the seed called for above will please answer.]

All who Subscribe for the APICULTURIST, at any time, will receive one of our combined Drone and Queen-traps free by mail. This is our method of introducing the APICULTURIST and our Drone and Queen-traps into every apiary in the United States.

Those who receive the trap as a premium must not expect to get the Handy Book or a queen for fifty cents, as the profits are so small that only one premium can be given each subscriber.

NOTICE.

We do not advertise to give premiums to those who subscribe through other parties. We pay news' agents a percentage on all subscriptions sent us, and if you choose to give the agent a profit instead of sending direct to us, it is no fault of ours.

TO ADVERTISERS.

We will accept of bees, sections or foundation in exchange for advertising space in the APICULTURIST.

The Quinby Smoker.— A description of the improvement made in this well-known smoker was given in the "API" some time ago. We now have a lot of them on hand. This smoker, as now made, is the most perfect of any bellows-smoker in the market. The good points are these: if the fuel is dry, a smoke can be had in a minute's time by merely applying a lighted match to the "fire-hole" at the base of the barrel. Those who use the old style Quinby smoker are obliged to go to the stove for a coal of fire in order to ignite the punk.

NOW IS THE TIME.

Send $1.50 and get the AM. APICULTURIST one year, and a copy of the BEEKEEPERS' HANDY BOOK.

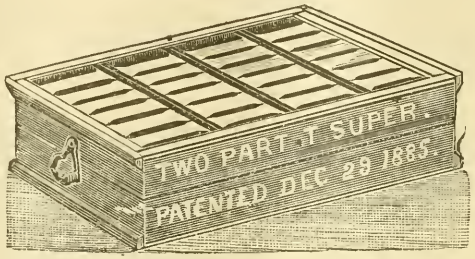
The book contains 300 pages, 100 fine illustrations, is handsomely bound in cloth and sent to each subscriber by mail, for fifty cents in addition to one year's subscription to the "Api." Regular price of book, $1.10 by mail.

This work treats of the best methods for rearing queens, and is pronounced by Rev. L. L. Langstroth to be "the *best* authority on this important branch of beekeeping."

THE TWO-PART SUPER.

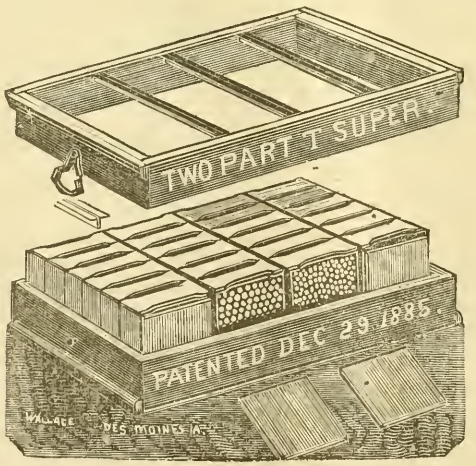
J. M. Shuck.

The cuts show very clearly the different parts of this section case. It is divided horizontally; the two parts may be equal or they may not, but to be perfectly interchangeable, as parts in an apiary, they should be equal or half and half.



To prepare for use, starts or full sheets are put into the sections, the sections are then put in rows in the super, and the separators at the ends of the rows put in place, or separators placed between the sections if desired, and then the remaining half of the case is pressed down over the exposed half of the sections and clasped fast. The super is now invertible and is provided with the necessary bee spaces on both its open sides; or, to be better understood, bee spaces under the sections and over them.

The T-shaped supports may be made of wood and metal, by nailing hoop iron to the outer edges of the partitions, or wholly of tin as shown in the cut. The partitions may be full depth of the half case, or only a half inch as may be desired, and they may be fixed permanently in the case or detachable at will. If the tin supports are used, full length separators can be utilized if the beekeeper desires.



The blank protectors on the tops and bottoms of sections may be used or dispensed with by choice.

Des Moines, Iowa.

The American Apiculturist.

A Journal devoted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., NOVEMBER 1, 1887. No. 11.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt shipment. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

SHALL WE PLANT FOR HONEY.

R. L. TAYLOR.

Much has been written to demonstrate that it is profitable for beekeepers to raise honey plants for the nectar to be obtained from them. Much money has been expended for seed, scores of apiarists have planted and now many years have elapsed since the sowing began. Is it not time to inquire about the harvest? Who has gathered a paying crop? By this time some one should be able to show a good result or else beekeepers should no longer be advised and importuned to spend their money for the seed of honey plants and their time sowing the seed. I have as yet heard of no paying yield of honey from plants sown for that purpose alone; indeed what possible reason is there that any one should ever have expected it?

Within two and a half miles of my home apiary are 12,000 acres of land and at a fair estimate perhaps one-fourth of that territory or 3,000 acres are fairly well stocked with honey producing plants: willows, maples, apples, plums, cherries, thorns, raspberries, clovers, basswood and autumn flowers. With 150 to 200 colonies of bees in good order and well managed I may reasonably expect to obtain from that apiary in a fair season about 10,000 pounds of surplus comb honey or at the rate of $3\frac{1}{3}$ pounds per acre.

But some one would double the number of colonies in the apiary and double the supply of nectar by planting. Let him consider how many acres of sweet clover, mignonette, catnip and Chapman's honey plant he must cultivate to produce nectar to equal in quantity that produced by the 500 acres white with clover and the 100 acres solid with basswood within reach of the bees to say nothing of the maples, willows, and the rest. If he were assured that his plantation would produce 100 pounds of surplus to the acre he must plant 100 acres. If he knew it would produce a ton to the acre he must plant five acres; and could he afford to do that, when within five miles are six other stations equally as good as the one he occupies which he may have almost for nothing? Who may hope to win in a race with nature in the production of honey plants? His reply when he considers must be: no, we cannot compete with nature.

But some one wants to fill up the "gaps" and so have a continuous honey flow. That seems entirely impracticable except per-

haps to an extent that would only prove a stimulant to excessive breeding at an untimely season of the year and we may well inquire whether we can afford to be at much expense to effect that result. I have secured a surplus the present season of 6,000 lbs. of comb honey from 300 colonies; and I calculate that, if the honey flow from which this was obtained had been spread over the entire season, I should have had not only no surplus but that my bees from the continual incitement to breeding would have been in greater need of stores than they now are. So I reason that a honey flow, after basswood is past, that merely conduces to an increased spread of brood, is not very desirable. After colonies once become strong in the spring I believe that the greatest profit is to be found in the flow of nectar that comes in floods even though for limited periods. Certain it is that in this way only can we get the finest honey and avoid the rearing of unprofitably large numbers of bees.

There is certainly much food for thought in the various questions which arise touching the subject upon which beekeepers would do well to ponder.

It is to be observed that I have written nothing against the raising of plants that are profitable for other purposes than honey, and that I have not been considering the interests of those who make it their business to produce not honey but bees.

Lapeer, Mich.

If this number of the APICULTURIST does not please all who read it they must be hard to satisfy. Show it to your friends and explain the advantage to those who become regular subscribers.

For the American Apiculturist.

TROUBLE WITH THE BEES.

MRS. H. HILLS.

Mephisto says he is sick and tired of seeing my nonsense in the API, and he believes the other readers are, also; I merely referred him to headquarters, with his complaints. There is a pouring rain this morning, and as I can do nothing towards worrying the bees, shall proceed to worry the "keepers."

One thing puzzles me greatly: we have had abundance of fall bloom, since the copious rains, following the protracted drought, and the bees have seemed to work well, although the weather has been cool. To my surprise, on opening the hives, colony after colony was found, almost absolutely destitute of stores. When, finally, I opened one, in which, not one single cell of honey could be found, the sight fairly made me shudder. If I should allow a colony of bees to starve, I should be so sick of myself, that I should want to hide away from sight forever. Never before, have I seen empty hives in my apiary; and never before, have I seen such quantities of brood reared in the fall. If plenty of young bees is a prime factor in successful wintering, certainly they have secured this point.

Another thing: I have never seen bees so fully set on robbing, as this season. I have never been troubled with attempts at robbing before, to amount to anything; but while trying to double up colonies this fall, have often fancied there was danger. Have also, this fall, received the first complaints from grocery-men as to annoyance caused by bees. One day, a beekeeper from just across the village, a very good friend of mine, came, in all haste, to inquire if my bees were fighting. Finding all quiet,

except that they seemed remarkably busy at work, — also, that I had not opened a hive, hardly during the past ten days, he seemed puzzled. Said that, as for himself, he had, unfortunately, left some honey in hives, where bees had died last winter; and that the bees had pulled a piece of lath out of the entrance, and thus gained access to it, with results that came near being quite serious; also, that there was, at that moment, a whole swarm of my bees at Mr. Smith's grocery. That he had just assisted the latter, in rescuing all the fruit, kept outside the door, from their inroads; that the bees followed the fruit into the building, where Mr. Smith was doing what he could to protect himself, by trying to poison them; also, which appeared to me natural enough, talking some pretty hard talk, about so many bees being kept in the village. Now, two years ago, all this would have alarmed me beyond measure; and was at present, a serious trouble; but I could not possibly help smiling "in my sleeve," all the time he was telling the story, at the thought, that Mr. Smith was, perhaps, at that very moment reading the announcement in the local paper, that I was proposing to increase my apiary, another season, to the extent which the neighboring "pasturage" would admit of. I was also amused, and, of course, somewhat pleased, on the whole, that the depredators were surely *mine;* though my *almost*, three nearest neighbors hardly a block away, are all beekeepers;— to say nothing of those of my beekeeping friend, who brought the news. The latter had used rather rough language to the grocer, for destroying *my* bees. However, I at once assured him, that, though it seemed too bad to poison the poor things, the loss of the bees would not trouble me.

Next morning, bright and early, I proceeded to interview the grocer. Found him as smiling as possible, and proceeded, almost with tears in my eyes, to tell him how much I regretted the trouble caused by *my* bees. Of course I knew nothing of the poisoning,—though he was very anxious to learn just how, and how much, I had heard. I told him, what was very true, that Mr. Hills had spoken of his show of fine fruit, and of its being a credit to the village,— and what a shame it was, the wretched bees should cause such annoyance. He said that they did cause him some trouble yesterday, — and that he lost the sale of fruit, for the whole day, people being afraid to purchase, and take away the fruit, at the risk of being stung. I, of course, offered to repair damages, and also to pay for wire screening to make a receptacle outside; but he would not listen to it, saying it was only a few days in the season, that bees were troublesome;—that we all had something of the kind to get along with and must do as well as we could. He also, finally said, that the bees got at some poison, placed for flies, and that quite a little handful had died; and that a little girl, *daughter of a neighboring grocer*, on passing the window and seeing them, had exclaimed, "Oh! how Mrs. Hills would cry, to see her poor bees poisoned." Finally, I assured him, that I should send an extra case of honey, and he assured me that he should give me credit for it. The honey was sent, and probably credited, though I see no reason why he should not be paid; and shall attend to it at the time of settlement.

INTRODUCING QUEENS.

The queens, received August 25, are laying finely. I tried introducing one to a nucleus, made after

the "Doolittle plan." Shook bees into a wire cloth box, placed them in a cool room over night, let the queen run in, next day, and "dumped" them in front of a hive at night; at the same moment, finding the queen balled—whether from good or evil intention, on the part of the bees, is more than I can tell — caged the queen in Klimitz cage, closed with "Good" candy, and the bees appeared to ball the cage. Then closed the cage entrance firmly with wax, and left above the frames three days. Bees appearing somewhat more quiet, I then removed most of the wax, and replaced the cage, and did not touch the hive for a week. What was my surprise, at then finding the cage entrance sealed up nicely, queen inside, brisk as a cricket. Again removed most of the wax, replacing cage, this time leaving only a few particles of wax. Some two weeks after found, what I took to be, an immature queen, thrown out at entrance. Supposed, of course my fine queen had been superseded; but later, found her all right with quantities of brood in all stages. Also found several immature drones in worker cells, on a comb taken from hive containing laying worker. I had mistaken one of these slender immature drones for a queen. In introducing, I tried to follow Mr. Doolittle's directions. But Mephisto, who can always be depended on to do the right thing at the right time, opened the blinds and curtains of the room where the bees were;—also the door to an adjoining warm room,— as he said, — to give the poor things light and warmth.

For introducing a second queen I went to a very heavy colony,— two story — with zinc-board between the two. Carried away the lower story to a stand, where was a laying worker, and united it with that, thus safely settling that trouble. The returning bees, with those in the upper story, made a fine nucleus, to which, after three days, the queen was safely introduced, by being placed over the frames, in cage closed with candy.

Sheboygan Falls, Wisconsin.

CURRENT TOPICS.

SAMUEL CUSHMAN.

THEORY AND PRACTICE.

THE articles on the "Production of Honey" in the June number of the "API" were a great treat. Without doubt this collection of essays represents the best of the various methods followed in this country. As Doctor Tinker described a system similar to the one I have followed, his article was the one most appreciated by me.

For two seasons I have used shallow hives of closed-end, hanging frames (Hoffman style). Cases or hives are about the depth of the regular Langstroth hive and the more I use them the better I like them. I can remove, interchange and tier up hives with much greater ease than with the full depth hive, as there is but half the weight to lift. These shallow hives take brood-frames or wide frames, holding one tier of sections, as may be needed. I also use the full depth Langstroth hive in my apiaries, and these shallow hives may be used on them for surplus stories, either with brood-combs for extracting or wide frames of sections and two empty bodies will hold the regular L.-frame, leaving a double bee space below.

By the use of division-boards a shallow case may be quickly made to hold three nucleus colonies, one to fly out at each end and the other at a hole in the side. This we have

practised for two seasons with no loss of queen from imperfect separation.

In using wide frames of sections these same division-boards are used to limit the size of surplus room according to the number of frames given.

As no frames fit tightly, both brood and wide frames are removed and replaced as readily as from the ordinary Langstroth brood-chamber without shaking out or removing the bees. To say that I am pleased with my arrangement and this system would be saying little. I have to thank Mr. G. W. Demaree, James Heddon, Doctor Tinker and Oliver Foster for points which enable me to follow out this plan successfully.

Mr. Heddon's book showed me advantages and the possibilities of this system that I had not thought of, and I believe that in the future in large apiaries, when little manipulation is to be given, this will be the system followed.

With these shallow hives of hanging frame I claim I can follow the Heddon system and get all the practical and desirable features and do it better and easier than with the new Heddon hive, and that without having anything in the apiary that will not work on my regular depth L.-hives. I have several Heddon hives in the apiary and am studying their merits and defects.

The "shake out" feature I find is no easy thing to follow with a full case of honey; with only brood and empty combs it is less trouble. I imagine the "smoke out" feature will stand the test better, but with each plan or both combined, some bees are left on combs and must be allowed to leave at their leisure in the screen house.

When a case is to be cleared quickly and surely, I believe the "brush off" plan will be the "shortest way across."

Thumb-screws I like and do not like. They are in the way and are exposed to the weather, but are convenient to crowd up both wide and brood frames. I am undecided whether to order next season's hives with or without them; I think it will be without.

FINDING THE QUEEN.

To find the queen in my hives we can set one case on another bottom-board, and then it is just the same as looking through two ordinary hives, except the frames are light and easy to lift. This will do in early spring, but when colonies are populous would be tiresome. To shake them on the ground and watch for the queen as they run in, I find unsatisfactory; and have followed a plan this season which is original, and although I think others must have thought of it and followed it I have not yet seen it described in the bee journals. To do it I sift the bees; the drones and queens are left. The queen excluding honey-board is the sifter.

I free one brood-case of every bee, place it on a bottom-board, on it the zinc honey-board, above this an empty hive and then the brood-case of bees. They are then smoked and driven down into the empty hive and through the zinc into the lower brood-case.

In most cases the frames in the top story are taken out and shaken, but it is often unnecessary. The queen is found trying to find her way through the honey-board. I have not failed to find her in a short time except on my last trial a few days since. Whether the queen was small from lack of eggs and was able to go through or was not clipped and took wing, or the zinc was imperfect, I cannot say.

INVERTING.

Inverting brood-chambers seemed to us from the first unnatural and objectionable, and as we were able to attain the desired end more readily other ways we have not practised it. With Langstroth's frames, uncapping honey, spacing frames close and crowding brood-chambers were sufficient. Inverting shallow hives is often of little use.

In his pamphlet "How to Raise Comb Honey" Mr. Foster says:

"As we have observed, the main object of inverting and transposing is to bring the brood as close as possible to the surplus boxes. It is obvious that none of these plans accomplishes the object perfectly since the honey very often reaches from top to bottom of brood-chamber at sides, while the brood does the same in the middle. If we were to adopt this principle we would divide the brood-chamber into shallow stories. Then, by sorting the combs containing most brood above, our object would be nearest accomplished and there would be no need of inverting."

Interchanging is sufficient when an upper story is nearly filled with honey and nearly all the brood is in the lower, but when brood is in centre frames and honey in the outer frames of both stories, inverting or interchanging will not help matters? then it is very desirable that frames are readily movable.

I believe Mr. Heddon now places little importance on the inverting feature of his new hives.

CASES OF BROOD ABOVE SUPERS.

It has been proposed by several to place a surplus case between two cases of brood, the queen being confined to the lower one by the zinc honey-board. I first heard of this from B. Walker, Capac, Mich.

I hesitated to follow it, fearing sections would be soiled; that the confined drones would die and that as bees would feed larvæ for a time above sections, pollen would be stored in them. Doctor Tinker has given a point on getting rid of the drones, and if it works nicely it will do away with one objection; and the other I overcame by raising the case above the honey-board and under the sections at first, until the larvæ were all sealed, then it was placed at the top above the sections. When bees are well at work in sections and before they are capped, this brood-case is removed and is extracted; or, if it contains brood, it is placed upon a weak colony. I do not think this plan of arranging brood-cases will be largely followed.

We find one case of brood above the honey-board brings the bees through it and then there is no barrier between them and the sections; this case also catches the pollen and keeps it out of the sections.

PERFORATED ZINC.

I do not feel ready to believe that queen-excluding zinc is absolutely no hindrance to the bees and it is a question with me whether it would not be better to leave more room in brood-chamber except with new swarms and use slat honey-boards without the zinc. I should get less pollen in sections than with contraction and probably less honey in boxes and more to extract but there might be a greater crop with less labor and less risk of insufficient stores at any time of the year.

Mr. Cowan has discarded the use of perforated zinc. If a colony is contracted too much, pollen will go into sections whatever the hive used and I prefer to give more room than less. With me new swarms, hived on a few frames containing starters with drawn-out combs in section above honey

board will, in most cases, store pollen in sections. I suppose the honey-flow has much to do with it. I believe it both profitable and desirable to let bees build their own brood combs at swarming time; and, with a contracted brood-nest, and a young queen I do not apprehend any trouble from getting more drone comb than I wish. But in the future I do not expect to put on sections until brood combs are partly built or (with the shallow hive) place a case of empty brood combs above honey-board between sections and brood-nest.

SIMMINS'S NON-SWARMING SYSTEM.

We have managed fifty colonies on the above plan and although this has been a poor season for swarms we are as favorably impressed as at first. Have had two swarms from the fifty and in both cases the extra room was given above and only an empty half story placed beneath. These colonies were very powerful and built combs in centre frame clear to the bottom before swarming. The hives from which I wanted swarms that I might get queen cells were managed as usual and with one exception threw out strong swarms. I never kept so many in one hive or had all my swarms so powerful. Some colonies occupied same as three and four Langstroth hives. Large entrances were given and extra room added before it was quite needed. I have taken both comb and extracted honey from these hives. When full depth frames with starters were placed underneath brood-nest, and boxes given as required, combs were not built below. Unless sections contain drawn out combs, or at least a few are given, bees prefer to work out new combs in empty brood frames to working in sections even when full sheets of foundation are used.

This non-swarming plan *if a success*, and I do not see why not with a young prolific queen, will be a great help to comb-honey producers.

Mr. Cowan by tiering-up and giving plenty of empty combs below prevents swarming and takes honey in sections. Much of his yield is removed in brood combs and extracted however; and in working solely for comb honey the empty space may increase the amount stored in sections and still prevent swarming.

I believe there is no hive better suited to follow this system than these shallow hives nor any system so in accordance with the Simmins' plan as that given by Mr. Heddon and advocated and followed by Dr. Tinker, myself and many others with various modifications in the hive used.

Pawtucket, R. I.

For the American Apiculturist.

"AN EMPTY BAG WITH A CHEESE IN IT."

J. W. PORTER.

The above was the amusing description of a "lost" article advertised by an honest countryman.

Friend Demaree's explanation of his empty hive in the last number calls it to mind. But he must not think my letter did no good. It certainly brought out his letter which is good and suggestive.

Now a word as to the "exploded idea" as he calls it, of building up the weak colonies "at the expense of the strong," as he styles it. No wise manager would do it at the expense of weakening unduly strong colonies. But there are hundreds and perhaps thousands who do not wish to increase their

stocks and none of us wish to manipulate or keep unthrifty, profitless colonies.

Why are some of that character to be found in every apiary?

I replied to this question once asked by friend Heddon, by saying—"for the same reason that we find 'ne'er do wells' among men, and in all animated nature, as well as in the vegetable kingdom." We plant trees apparently alike, and give them the same care and attention, and often find that while some reward us richly, others never do well.

There are deep questions involved in the inheritance of vital forces which affect the productive powers of animals, and of vegetable life as well. Breeders of horses, cattle, sheep and swine understand well the importance of this subject. They know the value of a parent that can invariably transmit to progeny its own high qualities. They also know that some progenitors will not do this surely.

Without question this is true with bees. Just *why* one of a batch of queen cells shall provide a parent queen whose qualities are all desirable, where others, coming out under the same conditions and so mated for aught we know shall prove worthless, is one of the secrets we may never know.

Many of the laws of development we master. Some we have not.

Now then, very many, as we believe a great majority of these weak, profitless colonies, are such from inherent defects of the queen mother. If this be so the true policy is to replace her. And to make up for delays and lost time we would use the redundant energies of other colonies, in preference to encouraging natural swarming.

We all note the increased energy of newly hived swarms. All who have their yards and fields as they believe fully stocked, and are prepared for and actually making fine comb honey, know how provoking it is to have it all broken up by the issue of powerful swarms. We have failed to note any diminution of energy caused by adding sheets of brood and the honey case with all its bees to the new swarms, in many years' practice. And we never had but one case where a prime swarm, thus treated, cast a swarm the same season. And we have *never had one desert*, where even one comb of brood was put into the hive with a swarm.

I am well satisfied that no rule will work equally well in all apiaries. Different management is required as environment varies, and as the races and habits of bees vary.

We doubt if many apiaries will show less natural swarming than ours. As to results in honey product they are always satisfactory in good seasons. 300 pounds to the colony is the highest ever attained by the best, 200 pounds being often had. No *master* of the business ever had colonies too strong.

It is an open question, however, as to the attainment of the best results in a given field by the use of a larger number of small hives instead of the larger ones which may to a certain degree, be made non-swarmers.

This is doubtless to be tested by the Heddon hive. It appears to be an important feature of his system. It is a subject worthy of investigation and trial.

We have always believed that 40,000 bees will store more honey in one colony than in two. But will the same rule hold good for 60,000? If not, it is because of facilities being curtailed by numbers.

We cannot believe that, under like circumstances, an eight-frame Heddon hive can be made to pro-

duce as large results as a ten frame Langstroth. But ease of manipulation, and the ability to keep a larger number on the same field, are important factors. We are making some experiments in this direction here.

For years we have been building up in two frame hivest ill honey harvest, then contracting to force bees up into the sections and tiering up cases with sections, and have colonies which have never swarmed and have had many tiered up three high.

That *must* involve some loss travelling up so high, and we aim to avoid it and do generally.

The season has been a poor one, the worst ever known, and strange to say my bees made an average of forty pounds surplus, nearly all of it after June 25 when our season usually begins to wind up. Just now they are storing much honey from golden rod and other fall flowers.

Charlottesville, Va.

American Bee Journal.

U. S. HONEY PRODUCERS' ASSOCIATION.

J. M. HAMBAUGH.

To organize a controlling per cent of the honey-producers of the United States, and thereby bring them under the controlling influence of the association, is a task not easily accomplished. Can the north, the south, the east and the west, be brought together under one bond of brotherhood, so that there will be no infringing of rights, one upon the other, in the financial transactions of the entire honey traffic of the United States? Can our organization be so strong that we can successfully "bull" and "bear" against the laws of supply and demand?

We will suppose for argument's sake, that we are now organized, and have proclaimed to the world that the prices on our product shall no longer be trailed in the dust, and consumers must pay us fifteen cents a pound for extracted honey, and twenty-five cents per pound for comb honey, or go without it; what does any one think would be the result? I believe the mass of the consumers would argue that they can obtain granulated sugar at fifteen pounds for a dollar, being equivalent to less than seven cents per pound; from this they will say they can make syrup costing less than six cents per pound. Hence the folly of paying fifteen cents per pound for honey when they can get a fair article of syrup for six cents per pound. Sorghum molasses can be bought from forty to sixty cents per gallon, and the larger per cent of the consumers will live on sorghum at those figures rather than to pay at the rate of $1.65 per gallon for extracted honey.

Can any tell how this state of affairs can be benefited by an association of honey-producers? We might be able to raise a "corner" on our product, but at the present low rates of other sweets, it would eventually succumb, and at last be governed by the laws governing the supply and demand.

To me, there appears to be but one remedy, and one road out of the mire, and that is expressed in this short sentence: *Increase the consumption of honey*!

Do away with commission men entirely and sell only to the retail dealer and the consumer. Let honey seek its level along with other products of man's labor, and when we cannot produce it at the prices, the times and circumstances

justify, let us step out and surrender to those who can. We should endeavor to increase the demand by giving the consumer something to "tickle his taste," and by our honest, square dealings, let him know that he can rely upon our word, and feel that he gets value received for his money.

We should endeavor to maintain good prices by placing a superior article upon the market, put up in such shapes as will attract attention and suit the convenience of the purchaser; but until the farmers, cane and sugar producers, wool-growers, etc., effect a "corner" on their products, I believe it useless for the honey-producers to organize with that end in view; on the other hand, I believe it to be detrimental to their interests. While I believe in organizations to defend our rights, elevate and increase our industry, I do not believe in "corners," monopolies, etc.

Springs, Ills.

For the American Apiculturist.

LONGEVITY OF QUEEN BEES.

JOSHUA BULL.

On page 240 of the API for September, 1887, you solicit reports upon the longevity and continuance of the fertility of queens, in response to which I submit the following:

I have two queens which have rendered good service for four summers. One of them is of the Italian race, was hatched in June, 1884, and superseded her mother; has always been very prolific, and had all the brood space she would occupy until swarming time; has led out a large swarm every summer except the first, after swarming has been restricted to eight frames 11 × 12 inches inside measure during the remainder of each season. This year she did not come out with a swarm until the fifth day of July, at which time her colony occupied twenty-two frames, eighteen of which were well filled with brood. This is her fourth season and she has been more prolific this year than ever before, and is apparently still vigorous and healthy thus far, and goes into winter quarters with a strong colony and plenty of honey. Her bees are excellent honey gatherers, but are stubbornly opposed to storing it in sections; I have to take their surplus in the form of ejected (extracted) honey.

The other queen alluded to is of the brown German race, with just Italian blood enough in her (or the drone with which she mated) so that about one out of every hundred of her offspring will show one or two yellow bands. She has never been so very prolific as the one above mentioned, yet her progeny are excellent workers and good comb builders, and seem just as willing to store honey in sections as in any other part of the hive; they have sometimes produced as much section honey as some other colonies of equal strength did of extracted at the same time.

Perhaps you will think that these queens have been superseded at some time when I did not know it, but that could not well be the case, for both of them have one wing clipped, therefore if they were superseded by a young queen the fact would be easily discovered.

Seymour, Wis.

For the American Apiculturist.

A GOOD QUEEN AND A GOOD REPORT.

J. W. TEFFT.

I have no reason to complain of this season's work, as my bees have done well.

The queen you sent me in August, 1886, was introduced successfully, but to my disappointment she did not lay an egg. I wintered her and they came through with only about a pint of bees, all old bees probably.

I should have lost her had I not gone to a neighbor and purchased a pound of young black bees. I put them on two frames, tucked them up warm and fed them with a little honey and water. To my surprise and delight she commenced to lay and kept it up until she filled twelve frames full of eggs. I never saw but one queen so prolific before. I have taken away from her six frames of honey and hatching brood and sixty-six one-pound sections of as beautiful honey as I ever saw, and expect to take twelve more pounds of golden rod honey, as twelve more sections are almost finished.

I shall winter them on eight frames; four of them will be solid honey in frames 10 x 15 inches; the honey in the four frames weighs twenty-eight and one-half pounds; the other four frames may contain three pounds of honey each. The hive is full of bees and I am well pleased.

Collamer, N. Y.

[The bees could not rear brood until the young black bees were added to the colony, as the bees that had survived the winter were too old to nurse the larva. Your report pleases us very much.—*Manager* API.]

For the American Apiculturist.

ANOTHER GOOD REPORT.

SELDEN B. HITCHCOCK.

THE queen ordered of you was received Sept. 1 all right; was successfully introduced by the three day plan given in the API. I could not well get along without your valuable paper. The plan for introducing queens is well worth the price of subscription. I have this season introduced several virgin queens by the above plan, thus preventing after swarming.

My report for this season is as follows: Took twelve colonies from the cellar after a confinement of 170 days, increased to nineteen; amount of comb honey taken, 815 lbs., mostly in one-pound sections. I run for comb honey; do not extract *any*.

Bees in general have done very poorly in this section; many bee-keepers are getting no surplus. A neighbor, a half mile away, with fourteen colonies, gets about sixty pounds surplus. My best colony made 102 pounds honey besides finishing one set of twenty-eight sections that had been commenced.

Westfield, Vt.

"American Bee Journal."

MARKET REPORTS OF HONEY.

EUGENE SECOR.

I have heretofore been in favor of the market quotations in our bee-periodicals; and when the storm of indignation gathered about the heads of commission men last winter, I felt inclined to avert it, thinking, or wanting to think, that they were doing the very best that they

could do under the circumstances, to sell our product for all it would bring.

But on looking over the quotations of honey recently, I am forced to one of three conclusions: First, honey must be more plentiful in the United States than we have been led to believe; or, secondly, that too many of our producers must be ignorant of the true state of affairs, and are rushing the new crop on the market before it recovers from last year's depression; or, thirdly, that the large dealers in the cities are trying to keep prices down until they shall have stocked up.

Now, as a honey-producer myself, and with some facilities for observation by travel, and a reader of nearly all the bee-papers, I know that this year's honey crop in America will not be one-half as great as it was last. Many good judges place it much lower. Taking the state of Iowa as a whole, I doubt if there is one-fourth as much; and from all I can learn, there appears to be very little new honey on the market as yet, or, in fact, *any* honey.

I have recently visited some of our large western cities, and find the market bare. Therefore, I conclude that the old-fogy bee-keepers are not demoralizing the market this year. Indeed, when we think of it, we might know that would be the case; for in such years as this they do not have any to sell. Now what can be said to avoid the conclusion—that the city jobbers are "bearing" the market in order to buy?

Let me quote from the *American Bee Journal* market report, on page 589, Sept. 14, as to price of honey in some of the leading cities. I will only notice the quotations for white honey in one-pound sections: Chicago, 18 cents; Detroit, 17 to 18 cents; Cleveland, 17 cents; Boston, 20 to 22 cents—good for Boston! — New York, 16 to 18 cents; Milwaukee, 17 to 18 cents; Kansas City, 16 to 18 cts.; St. Louis, 12 cents, and Cincinnati, 15 cents.

If "the old crop is all sold out," "no white clover in market," "offerings small of all kinds," "short crop indicated," and "demand large," prices ought to be a little better than most of the quotations. I believe, as a matter of fact, they *are* better. I think some of the best commission men are among those who advertise the least. They let their sales and returns speak for them. I have in mind one house who have sold our dairy butter for top creamery prices, and above quotations right along. I sent them a trial shipment of honey a few days ago, and instructed them to hold for 20 cents. It had barely time to reach the city when I received a telegram saying, "Honey sold—20 cents—send more quick." These men told that they sold several carloads last year for beekeepers who would have none to sell this year.

In conclusion I will add, don't sell honey at less than Boston prices.

Forest City, Iowa.

Introducing Queens.— Early in August we transferred several hives of bees for some parties who reside fifty miles from Wenham. At the same time, Italian queens were introduced to some of the colonies by the following method: After the combs and brood were all fastened in the frames, the cages (the same as we have used several years for shipping queens) were inserted in one corner of one of the frames. The part of the wire cloth which covers the food in the cage was bent back so the bees of the colony could remove the food and thus release the queen. This plan worked perfectly.

Will our customers who have so much trouble in introducing queens take a hint from the above?

QUERIES.

Answers by Practical Apiarists.

IN-BREEDING.

Query No. 38. As I am a reader and great friend of the "API," I would like to have the following questions answered in its columns by some of the practical bee men.

As a general rule it is adopted that with all animals, as horses, cattle, hogs and dogs, no mating should occur between what can be called brothers and sisters, nor is any in-breeding allowed at all.

How is it with the bees? When a swarm issues a young queen is left in the old hive and is fertilized by drones reared from the same queen in which the young queen was. Is not that mating brother and sister? By such fertilization will not inferior descendants be the result?

JACOB WAGNER.

ANSWER BY DR. C. C. MILLER.

Possibly in-breeding is not so bad with bees as with horses, still it is not likely to occur in the way you mention unless there is no other colony within, some say three miles, some say half a mile.

ANSWER BY PROFESSOR COOK.

1. Is the first statement correct? Has not our very best stock been produced by careful in-breeding under the close inspection of a wise and expert breeder? 2. Do we know that queens and drones from some hives meet? 3. I doubt if any one can answer this question. We simply do not know. Much can be said on both sides.

ANSWER BY G. W. DEMAREE.

It is not at all certain that the same laws apply to in-breeding of bees which apply to the higher order of animals.

There is another matter to be taken into account, and that is the drone is a son of his mother only (see the Dzierzon theory) and cannot be a full sister to the queen. 2. If you will set an Italian colony of bees in a large apiary of black bees, you will be surprised to see how difficult it is to get a case of in-and-in breeding. It is a rare case that a queen is mated by a drone of her own hive.

ANSWER BY R. L. TAYLOR.

I do not understand that it is a general rule with careful breeders to avoid in-breeding — rather the contrary.

The young queen would, I suppose, be only half-sister to the drone and even if they were full brother and sister, inferior descendants would not necessarily result form such a cross. The fear of deterioration among bees through in-breeding is utterly groundless.

But how do you secure the fertilization of a queen by a drone from her own hive? I would give a good sum for a practical way to do that.

ANSWER BY JAMES HEDDON.

There is this difference between bees and human beings. Such in-breeding as you speak of in the human race would at once produce direful results. If it produces *any* evil results among bees they are so slight that I have never heard any one say that they had actually discovered them. I know that many believe that bad results come from in-and-in breeding among bees but there are many things firmly believed by men which are not true and for which they never had the least evidence. Great naturalists tell us that with many kinds of animals in-breeding is well when it takes place upon the native soil of the animals, but the same in-breeding on foreign soil produces bad results.

ANSWER BY H. ALLEY.

This is a question that upsets all hands. Suppose some one purchases a colony of bees and they are kept three or four miles from all others; yes, or even but one

mile distant. I am pretty sure that the young queens would mate with a brother drone. Well, now suppose this one colony increases to one hundred colonies, nine out of every ten of the young queens reared in that apiary will be fertilized by drones in the same yard even though there are other drones within one mile of the same apiary. I do not believe a queen goes twenty rods from the hive when she takes her mating flight. Consequently, if there are thousands of drones in the same yard with the queens, they will meet a drone in the same apiary.

Under such circumstances, in-breeding will go on for years. But do the bees deteriorate by such close mating? This is a question that but few people can answer. I have known large apiaries, that is, say fifty colonies, to be built up from one colony when there were no other bees near, yet could not see that the health of the bees suffered by such a long process of in-breeding. I consider it just as much breeding-in when there are fifty colonies in the yard (that is, if all the bees come from one colony), as when there is but one colony. It is all the same family. Yet there is a possibility that one out of fifty young queens might meet a strange drone from some wild colony or a drone from a distant apiary. Such mating would upset in-and-in breeding for a time at least.

ANSWER BY J. E. POND.

In this matter Mr. Wagner is mistaken else I am not versed in the rules of breeding. In-and in breeding is, as I understand it, made use of to a large extent for the purpose of fixing essential points that fancy or otherwise may call for. It must not be carried too far but when used judiciously it is of great value.

Now with bees: in theory it is decided that in-and-in breeding should be allowed; in practice there is no way to prevent it, and I have yet to learn of any ill results that follow therefrom. It is well settled that in the human race, near relatives should not intermarry, as it is claimed that mental or physical deformities will surely follow.

I have known of a single colony being kept far from the flight range of any other known bees, and increase from the same original stock up to thirty or more colonies, and did not see that the last colonies were worse than the original stock. The idea of close breeding is more a business scare on the part of some queen breeders, than of any real injury. Then again there is no certainty that the fertilization will come from a brother drone. The question opens up a big field, and to answer it as it deserves calls for far more space than can be given in this department. If Mr. W. desires information on the whole subject he should get some good work on "comparative anatomy," and there he will find the subject fully treated. There are also several works on the subject of breeding horses and cattle that will give some light, and prove mighty interesting reading.

The subject is very little understood by the majority, as only those study it up who are interested in building up their stocks.

THE *American Apiculturist* having invited essays on this subject from several of the most experienced apiarists in America, publish in their last issue several of these papers. These are so practical, useful and suggestive, that we intend giving pretty full abstracts of them in our columns of succeeding numbers for the benefit of such of our readers as are working, or intend to work for comb honey. — *Australian Bee Journal.*

The American Apiculturist.

Published Monthly.

HENRY ALLEY,
MANAGER,
WENHAM, MASS.

TERMS: $1.00 PER YEAR.
SEE INDUCEMENTS TO SUBSCRIBERS.

Wenham, Mass., Nov. 1, 1887.

THE MANAGER'S CORNER.

Mr. C. W. Costellow, of Waterboro, York Co., Maine, has a very creditable exhibit of beekeepers' supplies at the Mechanics' Fair now being held in Boston. We were pleased to know that a supply dealer could be found in the state of Maine who does such fine work as shown in the bee hives and other apiarian articles exhibited by Mr. Costellow. Our friends in the state of Maine should not send to parties at the west for their supplies, when such a good article can be had so near home.

The Australian Bee Journal which we all supposed had passed out of existence, has revived and is as good as, yes, much better than before. Its new editors, Messrs. R. L. G. Ellery and G. H. Kitchen, certainly deserve success.

Extracted honey is darker during a drought, and a correspondent asks us to explain why this is so. We hardly think that the linden or white clover honey is darkened in color by a drought, but being short, the bees may gather honey from some other bloom, and thus mix it. The red clover heads may be retarded in growth, and the bees may gather from that source, and thus darken the color. Alsike clover honey is of amber color, and when compared to basswood is very much darker. In many places during the past season the basswood yield was exceedingly short.—*Am. Bee Jour.*

[All honey gathered during cool and wet weather is much darker and poorer in quality than honey gathered during hot, dry weather. This has been our experience.]

BEES PUNCTURING GRAPES.

Last fall, as I was gathering grapes, I noticed that a great many of them were cut and bees were sipping the juice. I did not get to see any of the bees in the act of cutting the skin, but I noticed that the holes got larger as they worked on. Finally, I caught one of the bees to see if it could cut one of the grapes, and after its temper was aroused enough I applied its mouth to a grape and it cut it like a knife with apparent ease. After repeating this experiment many times I came to the conclusion that bees do injure grapes.—*C. E. Pleas, Indiana, in New York World.*

[A man who will sit down and pen such a bare-faced lie deserves to be exposed. The idea of getting a bee "mad" and then holding it in the hand while the bee "champed up" a grape is too silly to laugh over. Bees do not touch grapes until rain has rotted them, or some wasp has first punctured the skin. What sort of a mouth have the bees to "cut like a knife?"

A man in Wenham went to market the other day with several bushels of pears and offered them to a dealer. "I don't want them" said the dealer, "bees have made little holes in them and they will rot in less than a week." Which of the two might be the bigger fool we will not say, but both believed the silly yarn.]

Mr. Ivar S. Young gave the "Bee Journal" a call last week. He is now with Professor Cook. From there he goes to visit Mr. A. I. Root at Medina, O. He is a thoroughly practical apiarist, and is sent here by the government (we understand) to gather information that may be made of practical use in Norway. He is genial and speaks the English language fluently. He is a gentleman and a scholar.—*Am. Bee Jour.*

THE APICULTURIST SUBSCRIPTION AGENCY.

If any subscriber to the APICULTURIST desires a good weekly, semi-weekly or monthly publication they should consult the list of periodicals found on another page of this issue of the APIST.

From 15 per cent to 25 per cent will be saved to all who send their subscriptions to us.

Giving Credit.—Several parties who we supposed were honest have ordered goods from the Apiculturist Supply Department and promised to pay promptly. Although they have several times been requested to remit, no notice whatever has been taken of the demand.

Now, we wish to say that the manager is one of the hardest-worked fellows connected with the bee business and can assure debtors that he earns every cent he gets at hard labor. We also can assure our customers that the supply business has not been as remunertive for several years as it ought to have been, therefore we need the money due us to meet our bills.

Notice is hereby given that unless said parties either "pay up," or give some good reason why they do not, their names are likely to appear in the advertising columns of the "API" and there remain until the bill is paid.

Bro. Jones of the Canadian Bee Journal is a funny fellow. In a recent issue of that paper we find the following editorial remarks:—

"The readers of the Bee Journal will please excuse us if the Journal is not as interesting as it should be."

After reading the foregoing remarks we looked the Journal over with a view to find what might be wrong, and concluded that the C. B. J. was rather more interesting than usual. When we came to the last few pages we found that Bro. Jones had copied nearly three columns from the API. Now, Bro. Jones, did you really mean what you said in the above editorial remarks? We are inclined to think that your readers will agree with us in the opinion that that particular number of the Journal was more interesting than it commonly is. Bro. Jones is very funny.

The Rev. L. L. Langstroth appears to have improved in health again. His son-in-law (with whom he resides) has moved his family to Dayton, O., and Mr. L. writes us that the change has been of some benefit to him. He adds: "I hope for relief from the head trouble." His numerous friends throughout the world will be glad to know that he has had even a *slight relief* in the malady from which he has so long suffered. His address is 928 Steele Ave., Dayton, O.—*Am. Bee Jour.*

OUR ADVERTISEMENT.

At the request of a large number of the subscribers of the APICULTURIST our price-list of apiarian supplies will, in future, be inserted in each issue of the journal.

This publication cannot be run independent of a supply trade to back it up; as, like most all other publications devoted to bee-culture, the subscription list of the API does not support it. No paper of this kind can be published with profit with less than 10,000 subscribers. Yet, there is not a bee-journal in existence that has or ever had 8,000 subscribers.

Many of our readers desire to purchase supplies of some sort during the season. We can say to our friends that the manager of the API has received a liberal share of patronage from those who receive the API regularly, as well as from those who have received sample copies only. In conclusion, allow us to thank you all for past favors, and we hope by promptness in filling orders to continue to receive your future orders.

PRIZE ESSAYS.

To the person who will send us the best essay on "Prevention of Increase" we will pay five dollars and mail the API one year.

For the best essay on "Fastening Comb Foundation" in frames and sections one of the Bay State Reversible hives complete and one copy of the APICULTURIST one year.

For the best method for "Introducing Virgin Queens" to nucleus colonies we will give one copy of the "Beekeepers' Handy Book," send the API one year, also one combined drone and queen-trap by mail.

For the best article on "Advice to Beginners," said article not to exceed in length three columns of the API, one dozen drone and queen-traps in the flat, also the API one year.

To the first fifty beekeepers who will send to the API articles of one and not over two columns in length, on any subject of interest to beekeepers, we will mail the API free one year. There are hundreds of beekeepers who can give from experience much valuable information regarding bee matters.

The above offers are made, hoping that some of those who are competent to furnish articles will do so.

None of the above prizes will be paid to those who are considered experts. What is desired is articles from the "rank and file" of beekeepers. Other arrangements will be made for compensating those who are called upon to use their time for regular contributions. Let no one say "I don't know how to write for publication." Put your ideas on paper just as you would communicate them when talking to another person. We do not desire "high-toned" literary productions. Send us facts gleaned from experience and they will be put in good shape for publication.

BEE NOTES.

A virgin queen may be removed from a colony of bees and a fertile queen introduced immediately, provided smoke is used in the operation.

A virgin queen two days old cannot be introduced to a colony of bees unless the colony has been queenless three or more days.

A queen just hatched may be given to a full colony which has a fertile queen and she would in some cases not be molested for some few hours after being introduced; nevertheless her destruction is certain by the time she is forty-eight hours old.

A colony of bees will winter better, build up and increase faster and do better in every respect, if but seven combs, Langstroth's standard size, are used. Mr. Langstroth made but one mistake in his hive and that was in using too many frames.

No doubt had Mr. Langstroth possessed good health he would have discovered this one defect. Nevertheless, no one has done so much for beekeepers as has Mr. L., in giving his invention to the public.

Hives during winter should be placed, two feet at least, above the ground. If placed only half that distance from the ground a very light snow will completely block the entrance. Hence it will be seen that much work can be dispensed with, in the way of shovelling snow during the winter. Then, again, it is not quite as cold and damp several feet above the ground as it is directly on the ground or on the snow.

One of the colonies we had used in a small four-frame hive had swarmed out. While "cleaning up" such hives a few days ago, not less than four striped snakes had taken possession of one of the hives and seemed to be housed snugly for the winter. Of course they were despatched.

Do not expect a colony to go through the winter in good condition that has been in a bad way during the summer. The best thing to do with such colonies is to brush the bees from the combs and destroy them. The combs will then be in good condition for a new swarm the next season.

Colonies that had combs well filled with brood the first day of September will winter well even though no eggs were laid by the queen after that date. A queen may be given such a colony at any time in the fall and it is likely to come out in good condition in the spring.

On another page, Mrs. Hills gives her experience in introducing queens by a plan Mr. Doolittle recommends. We do not think such a method is a reliable one. Had tested such a way for introducing queens many years ago. In some cases it was a success and in others a failure.

Other parties have written us that they have tested this and other methods for introducing, as given in the different bee journals, and failed. Only one person has ever reported that a failure had been made by the "three-day method" as given so often in the API by the manager. It is the only reliable plan ever practised in the Bay State Apiary.

A NEW BEE PLANT.

Pleurisy root (*Asclepias tuberosa*) is a honey-bearing plant indigenous to nearly all parts of the United States, but its growth has not been encouraged for the reason that its value to the honey-producer has not been generally known. The plant is a perennial, the top dies and rots, a new growth springing up each year. It is commonly regarded as a harmless prairie weed. The deep, red blossoms hang in clusters. The plant is very hardy, and of a rugged growth, growing luxuriantly in all kinds of soil. The honey is of the finest quality, both as to color and flavor. Mr. James Heddon, of Michigan, speaking of the pleurisy root, says: "If there is any plant to the growing of which good land may be exclusively devoted for the sole purpose of honey production, I think it is this. I would rather have one acre of it than three of sweet clover. It blossoms through July and the first half of August, and bees never desert pleurisy for basswood or anything else. The blossoms always look bright and fresh, and yields honey continuously in wet and in dry weather. Bees work on it in the rain, and during the excessive drought of the past season, it did not cease to secrete nectar in abundance.

The above was taken from the "Southern Farmer" and was sent to Mr. Heddon for further information. The following reply was duly received.

Dowagiac, Mich., Oct. 10, 1887.

FRIEND ALLEY:

It was about five years ago when my attention was first called to the pleurisy plant as a honey producer. At that time specimens of that plant were exceedingly scarce in this locality.

I noticed from year to year that it not only increased very rapidly, but that it was the best honey yielding plant with which I am acquainted, white clover and basswood not excepted.

It is eminently adapted to light sandy soil, doing splendidly upon land too poor to produce ordinary farm crops.

Notwithstanding the great number of colonies I keep, I can hardly find blossoms which do not contain so much nectar that it is visible to the naked eye. The honey is very light colored and of excellent flavor.

It has now become so plentiful here that we have no honey dearth between basswood and fall flowers, neither drought nor continued rains prevent its secreting copiously.

It is not obnoxious as a weed, yet very tenacious as a plant, and above every thing else, perennial. It is a favorite of waste places and only has to be started in a locality, to become soon of great value to neighboring beekeepers. It requires no coaxing. In my opinion it is the best honey plant known to beekeepers. JAMES HEDDON.

[Now if some one who can furnish the desired information regarding the cultivation of pleurisy will tell the readers of the A B C how to grow the plant, when the seed should be sown or roots planted, and where either can be obtained, they will do our subscribers a great favor. Mr. Heddon left out of his reply this most important part of the question.

If this new honey producing plant is all Mr. Heddon claims, beekeepers should cultivate it. A plant from which bees can gather honey "in wet weather" was much desired the past season.]

HONEY-CAKE.

Work together equal weights of honey and flour; add spice to taste, and the right proportion of baking powder. Keep this dough in the cellar, and bake it as you need it, in a very slow oven. The cakes will be all the better if the dough has stood for a long time. Honey-cakes are very healthful and digestible, and their use is to be recommended to persons suffering from colds or sore throat.

Mr. Root, would it not be a good idea to induce all the housekeepers who read "GLEANINGS," to send you items about some of the ways in which honey is used in their family?—*Gleanings.*

MRS. E. J. BAXTER.

Nauvoo, Ill.

QUESTIONS AND ANSWERS.

CROOKED COMBS.

Angelica, N. Y.

Have not been able to attend to my bees for some time, and my new swarms have "bulged" and "crooked" their combs in a terrible manner.

(Some of the swarms were hived on foundation and others on "empty frames;" but, as to difference in effect, it appears to be about "six one way and half a dozen the other,' as for as I can see!)

Have tried widening, narrowing and "trimming" the combs, making things worse every time, if anything. So, here I come again to the old API, for advice.

W. M. BARNUM.

[When we have bulgy or crooked combs, they are made to fill the frames by shaving, trimming and more generally by pressing the combs between two boards. Any combs, it matters not how bulgy and crooked they may be, can be straightened and made to fill the frames nicely by the pressing process. We take such combs and lay them down on a perfectly flat board and then with a thin knife detach the comb from the frames in the bulgy and crooked places; another piece of board is placed on the comb and then we get upon that and thus press the comb into the frame. Cotton twine is then bound around the frame to keep the comb in place. In case the comb is new and does not rest on the bottom-bar, a piece of wood is placed between the bottom-bar and comb so that the latter will not sag. This operation, of course, must be performed while the comb is warm.

If the combs are full of brood in all stages, the brood will not be damaged in the least by the pressing it will get, provided the boards used are larger than the frame so that they will rest on the end pieces of the frame, which should be seven-eighths of an inch thick, or just the thickness of the comb used for brood-rearing.

This process has been practised nearly thirty years in the Bay State apiary, and we find crooked combs can be made as straight as a board by this operation. In all cases when we have transferred a colony of bees to frames this pressing method has been used.

Combs that are but slightly bulgy may be straightened by pressing the bulgy parts down by using the flat side of a large knife or with a thin board while the combs are warm. The first process given will give perfect satisfaction and the result after one trial will convince all who test it that any one can have combs as straight as desired.]

FEEDING BEES. DISEASED BEES.

Hamilton, Ohio.

MR. ALLEY:

DEAR SIR:—The most of the answers to Query No 31 given in the "API" recommend early feeding the winter stores. But there is nothing said about the condition of the brood chamber. We will suppose there is considerable brood in the combs, and they are put on six or seven combs. How can they fill the combs with stores? It seems to me that the combs should be nearly clear of brood, so that they can put their stores in the middle of the brood-chamber where they will cluster in winter.

With regard to that trembling disease, is it a motion of the abdomen back and forth? I thought that was breathing motion. Could you describe the symptoms?

T. K.

[The condition of the brood-chamber should not be considered at all when bees *must* be fed. All the cells in the brood-nest do not contain brood, and there is always room in abundance for the storage of food, even in a seven-frame hive. The bees will store the food given them in the empty cells, and as the brood emerges the cells will at once be utilized for the storage of syrup. You do not seem to realize that one comb the the size of the Langstroth Standard frame will weigh, when full, from seven to ten pounds. Such is the fact; we have weighed them on many occasions and found them to contain ten pounds of honey. Of course, such frames are some thicker than they should be for brood-rearing. You can see by this that there is a large amount of

room in seven Langstroth frames for storing honey, and still plenty of room left for all the brood needed to keep the colony up in point of numbers.

Bees afflicted with the "trembling" disease, shake their entire bodies. They seem to act as though they would go into the air without the aid of their wings, unless they held on something by their feet and with all their might. The disease is a mystery, and no one has discovered its true cause.]

QUEENLESS COLONIES.

Is a colony of bees queenless that has no brood or eggs on the first of October? The reason I would like to know if they are queenless, is that I may not have to look for the queen in a colony that I have to introduce a queen in. If you cannot answer this by letter, will you let us know in the APICULTURIST.

SIMON V. VEEDER.

[Most healthy colonies will have brood in all stages on the first day and generally as late as the tenth day of October. If a colony has no brood Oct. 1, it should be examined to see whether it is queenless or not; there is no other way to know certain about it. Don't introduce a queen until you are sure the colony has none.]

STRENGTHENING COLONIES.

Voluntown, Conn.

MR. ALLEY:

Bees have done well here for so wet a season.

The API speaks of making strong colonies before the clover season. Could it be done by returning an issuing swarm to the parent hive minus the queen which your trap would secure? Would they rear another queen and issue again? Should like to know how it would work. Yours respectfully,

F. S. BITGOOD.

[The colonies can be kept strong by returning the swarms. The bees would be likely to swarm out again in eight days unless all the queen-cells are destroyed; yet, if no queen is given them, they would not swarm, in case *all* the cells are destroyed, until about twelve days after the first swarm issued. The best plan would be to destroy all the cells and let the swarm, queen and all, return to the hive again. Other cells might be built and the bees swarm again in four or five days, and they may not swarm at all. Should they do so, the cells should be destroyed again and, in all probability, the bees would not attempt to swarm the third time unless the queen was quite old.

The above plan is very good for a small apiary, but considerable work and trouble where several hundred colonies are kept.]

PACKING BEES FOR WINTER.

La Belle, Mo.

MR. ALLEY:

The queen I received from you was a fine-looking one, but I lost her in introducing (inexperienced). I will try it again in the spring when I can tend to it more closely. I would like to have you give your opinion on packing bees for winter. How would it do to pack them this way?

Put about a two-inch thickness of paper around the brood-nest except on the front side and put a thin chaff cushion on top to absorb the dampness should there any accumulate, and spread paper over the cushion one-half inch or so in thickness. You know paper is about the best non-conductor of heat and cold. Please answer and oblige.

F. E. BAGBY.

[We see no objection to packing a colony of bees as proposed above; nevertheless we refer Mr. Bagby to the essays on "Wintering Bees" found in the October, 1886, issue of the API.]

FOREIGN NOTES.

Brother Jonathan.

It would seem from the jottings of "Amateur Expert" culled from the *American Apiculturist*, that there is as much diversity of opinion among our American cousins as among ourselves regarding the royal road to success in bee-culture, and I do not think any of them can give us much start in the race for honey; indeed, were we to exchange places, *i. e.*, take our bees to

their climate and pasturage, and let them bring theirs to ours, I almost dare stake a dollar on ours.

I see one or two of them put a partly built-out section of the previous year to entice the bees into the racks of sections. This is a plan I have adopted for the last few years and find it very successful. If I have plenty I put one in each corner of the rack, and if they contain any honey I uncap it and it quickly fetches the bees up. A partly filled section of heather honey is so powerfully scented, the bees cannot resist such a bait, and they rush up at once.

I notice Mr. Manum tiers a large number of sections on a hive at one time: this is, in my opinion, a retrograde plan. I have tried it and don't think I shall soon do so again, after seeing the state of the sections. What with the heat of the hive and the constant travelling of the bees over the lower sections, to say nothing of the propolis, they are so discolored as to be nearly unsalable; besides, where is the advantage? Bees don't like travelling over sealed honey so much, and the lower racks being filled and sealed nothing is to be gained by leaving them on the hives, and the plan necessitates a large outlay in racks.

On the other hand, Dr. Miller removes the middle sections as soon as sealed. This is bad policy; I think it upsets the bees and the breaking up of the cluster, when comb-building is decidedly a backward movement, besides the loss of time incident to such frequent manipulation. I find nothing better than the plan advocated by the writer of "Useful Hints" in the *Journal*, viz., to give a rack beneath when the first one is about half finished. I never have more than three racks on a hive at once and seldom more than two, and I may add seldom less. I see our cousins use full sheets of foundation in supers. No doubt the sections are more quickly filled by this mode, but those who adopt it in this country must remember that American super foundation is very much thinner than our English is, and the latter leaves too thick a midrib for some people when used in full sheets, and is expensive too.—F. Boyes *in British Bee Jour.*

APPLICATION OF WAX IN MEDICINE.

(*a*) *Remedies for coughs, expectoration, erysipelas of the head.*—Breathe the vapor of wax which has been melted in a hot iron or a brazier.

(*b*) *Healing Salve.*—Honey, oil and wax melted together into a salve hastens the healing of old wounds and fistulas.

(*c*) *Marigold-flower plasters for wounds.*—Out of marigold flowers a plaster can be made by bruising the flowers and the stalks and mixing it with as much lard as will cover them, letting it boil over a moderate fire for an hour, and is then squeezed through a cloth. The stuff that is pressed out is put over the fire, and as much yellow wax added as will make it of the consistency of a plaster. If less wax is used, marigold-flower salve is obtained. Both preparations are useful in all kinds of wounds.

(*d*) *Remedy for diarrhœa.*—In France the following remedy is found of frequent use: Scoop out the core of a quince, filling it with hot water, let it roast for a long time by the fire, and eat it night and morning for three days consecutively.

(*e*) *Salve for wounds left after removing warts.*—Prepare a salve of white wax and fresh unsalted butter, equal parts, and mix a little white wine with it.

(*f*) *Salve for burns.*—Wax and linseed oil give an excellent plaster for burns. Stahl's burn-salve is made of equal parts of butter and yellow wax.

(*g*) *Corn plaster.*—For corns a good plaster is made of wax, tallow and some verdigris.

(*h*) *Tooth-stopping.*—The tooth-stopping is prepared by melting together three parts of pure white wax with three and one-half parts of mastic and a few drops of oil of peppermint and making it into the pill on a marble

slab. The hollow teeth are filled with this so that the food may not lodge in them and irritate the nerves of the teeth.

(*i*) *Wax salve for skin diseases.*—Five parts of white wax, five parts of spermaceti, five parts of sweet almond oil, are melted together in an enamelled vessel, and are poured out into little paper boxes, and when cold are cut up into little slabs.—*British Bee Journal.*

TASMANIA.

News has come to us from the south. Foul brood has found its way into some of the best apiaries, and has already destroyed or hopelessly weakened a large number of stocks. Mr. Lloyd Hood informs us that his small apiary has been almost destroyed with this pest, and his best stocks lost. He states he persevered with the *phenol* cure, as well as with the salicylic acid mode of treatment advocated by Prof. McLean, of the United States Apicultural Station, but without success. Foul brood in his case was evidently accompanied by the disease often noticed in this colony in some cases to precede, in others to exist contemporaneously with foul brood itself, for he mentions heaps of dead bees outside the hives every morning. Mr. Hood further informs us, "it is the same tale of disaster all through the South Island with few exceptions." The Marinook Apiary of Mr. Wright, at Glenarchy, has suffered severely, but whether from bad season or disease is not stated.—*Australian Bee Journal.*

[Try cremation for foul brood. It is the only remedy. Make a bonfire of the entire lot of bees, hives and all—then select other colonies from an apiary in which foul brood has never invaded. Once more let us advise all not to try any experiments with a disease, so contagious and destructive when it once gets a hold in the apiary.]

The manager of the APICULTURIST will pay a premium of $5 in cash or in any of the goods advertised in our list for the best essay on feeding dry sugar to bees. The experiments to be conducted between April and November, 1888.

GLEANINGS FROM CORRESPONDENCE.

San Buenaventura, Cal.

The honey crop was an entire failure here this season. I have five hundred colonies of bees in two and three story L.-hives; they are full of honey now, but I did not extract a pound this season. My neighbor, Mr. R. Wilkin, ex-extracted about three tons from a small apiary near the coast, but the great apiary (that you see pictured in so many books and papers) gathered scarcely enough to last them till spring.

G. E. MERCER.

Chillicothe, Ohio.

MR. ALLEY:

The queen you sent me is one of the finest and most prolific queens I ever saw and her bees are truly beautiful.

FELIX B. MACE.

Mendon, Ill.

H. ALLEY,

Dear Sir:—I am so well pleased with the sample copy of the "API" you sent me, I cannot resist the temptation to subscribe although I now take two other bee papers.

Yours truly, EDWIN BALDWIN.

Sheboygan Falls, Wis.

MR. ALLEY:

Thanks for two fine queens, which are safely introduced. I am awfully busy, and fairly at my wits ends, trying to double up, and prepare for winter. *Just now*, the control of increase appears the all-important question. Perhaps *next spring*, I shall see the matter in a different light.

Respectfully,
Mrs. H. HILLS.

Lynn, Oct. 6, 1887.

MR. ALLEY:

DEAR SIR:

I bought one dozen of your drone and queen-traps last spring, and we think them an extra good article. My husband says he would not be without them for twice their cost. I had eighteen new swarms after getting them and they worked like a charm. I could feel quite easy when I saw the bees in the air, knowing my queen was safe.

MRS. E. A. HOPPER.

Wakefield, Mass.

MR. ALLEY.

DEAR SIR:

Enclosed please find one dollar to pay for the API another year, and fifty cents for one of those Italian queens. The one you sent me is doing finely. I am more than pleased with her.

GEO. R. TYZZEY.

Moncton, N. B.

MR. ALLEY:

If your Journal is always as good as the specimen sent me, I must have it.

J. B. FRASER.

We are glad to see and also proud to note the fact that so many of the foreign bee journals quote extensively from the columns of the APICULTURIST. Even Brother Jones finds it convenient to select from our columns. That is right, brother; we are much pleased and feel honored in having any brother editor copy from the API provided the Editors do not apologize because the general make-up of their paper "is not as interesting as common."

THE BAY STATE REVERSIBLE HIVE.

"I do not think you will always be satisfied with the size of frames of your reversible hive," wrote a well-known beekeeper a few days ago.

The above remarks were addressed to the manager of the "API" and had reference to the hive used in our apiary. The author of the remark has never used one of the Bay State hives nor has he had any experience with them. The hive in question has been used in our apiary some fifteen years; the last two years it has been used with a reversible brood-chamber. We have about as much notion of abandoning it as we have of going out of the bee-business, and that will not be as long as we have health and strength to handle bees.

A large number of Bay State Reversible hives were sold last spring, and while many have written us that they are well pleased with them, not one complaint has been made by any one who has them in use. There is no hive that will give better satisfaction than the Bay State hive. It has more good points than most other hives. While the brood-chamber can be reversed in a body, or each comb reversed singly it is not of course necessary to reverse often, if at all.

We do not intend to say one word against any hive in use, but will claim that the Bay State has no equal as a hive for wintering bees. Nor is there any other hive known to us in which a colony of bees will build up so quickly in the spring. When properly packed, the inner hive or brood-nest can be made almost as hot as a stove oven. With our experience we know it to be a fact that two quarts of bees in one of these hives will have double the amount of brood that the same quantity of bees will have in most any other style of hives.

This hive is so constructed that the heat from the bees must escape at the entrance, if at all, as all ventilation is completely checked at the will of the beekeeper.

A hive thus constructed containing six quarts of bees will so retain the animal heat generated by the bees that at least four quarts of the colony can go to the fields for forage, but in most hives the four quarts of bees have to stay at home to protect the brood, thus leaving but two quarts of bees to gather stores.

All the colonies in the Bay State apiary that are in Reversible hives have had more brood and bees through the season than the colonies in the Langstroth hives. Now this is a fact worth noting and the practical beekeeper will appreciate the advantage given him in using such a hive.

In rearing queens, we remove all

of the bees from the combs of the colony to be used for cell building. We find the bees can be taken from the reversible frames much more easily and quickly than from the common Langstroth frame, as there is no hive about it,—but frames merely which form the brood-chamber.

We claim that the sections can be placed nearer the brood than in any other hive, as no honey-board is used, and the section racks have a bottom and top-bar only one-eighth of an inch thick, while the top-bar of the brood-frames are but one-half an inch thick, and the bee-space between the frames and section racks is but three-sixteenths of an inch. Hence it will be seen that it is impossible to reduce the distance between sections and brood.

In some of the back numbers of the "Api" we have described the manner of tiering up the sections on these hives to any desired extent, so we need not repeat here.

Another advantage the Bay State hive has over others is that the outside case can be removed and not used at all during the summer. None have been used in the Bay State apiary this season, but all will be replaced and the bees packed for winter, early in October.

Visitors at the Bay State Apiary have seen with what ease the frames can be removed from the Reversible hive. No bees are killed or crushed, and there is no need of moving laterally any of the adjoining frames in order to take out any particular frame, as any of them can be removed without disturbing the bees on the adjoining combs.

Almost any practical beekeeper will concede that the advantages described here are important and worthy the consideration of all who desire to make beekeeping and the raising of honey a success. Last season we made these hives of heavy lumber ($\frac{7}{8}$ inch thick), but experience has demonstrated the fact that such thick stock need not be used, and all the hives shipped the coming season will be made of thin boards. This not only reduces the cost of transportation, but also the weight of the hive nearly one half as compared with those made last year. Only one set of sections will be sent with each hive, and the price of the hive will be reduced accordingly. Test these hives for yourself and be convinced that they are all we claim for them!

HOW TO RAISE COMB HONEY.

If the readers of this have not read the essays on "Comb Honey" as given in the June issue of the Apiculturist by some of the best practical beekeepers in the country, they should send and get a copy at once, as it is conceded by all who have read the fine essays on the above topic that they contain more solid information than any other work on the same subject. Price, by mail, 10 cents per copy. Sent free to all subscribers.

Don't fail to read the supplement sent with this number.

JUST PERFECTION.

Scotch Ridge, Ohio, Sept. 19, 1887.

Mr. Alley: Dear Sir: In answer to James Ewins' enquiry about the Heddon hive, I will say I have used the Heddon for two years and so far I have not found any moths in them, and I also have the Bay State hive and it is as near moth-proof as any hive I ever saw or used, and a No. 1 hive in every respect. I think the latter hive is just perfection.

L. Shanks.

SPECIAL NOTICES.

All who subscribe or renew their subscriptions at once will get the APICULTURIST fourteen months for $1.00 as all subscriptions coming in during November and December will be dated to expire January 1, 1889. In addition we give each subscriber one of our improved drone and queen-traps, also choice of any of the goods mentioned in another place of this issue.

NOTICE TO SUBSCRIBERS.

Please bear in mind that we stop sending the API to all subscribers when the time paid for has expired, unless requested to continue it, or the subscription is renewed.

If by mistake, the journal is mailed to you, and is not needed, please say on a postal card "discontinue API to my address."

Some of our subscribers have had rather "hard luck" with their bees and are not prepared to renew their subscription; to such the API will be continued if they request us to do so,—and if paid for inside of one year it will be perfectly satisfactory.

BOUND VOLS. OF THE API.

We still have a few bound copies of Vol. I and II of the AMERICAN APICULTURIST. The book contains 288 pages, and every part of bee culture is treated upon and by the best apicultural writers in the world.

The work is handsomely bound in cloth and will be mailed to any address on receipt of fifty cents.

Vol. III is also handsomely bound and contains 290 pages of very interesting and most instructive matter pertaining to every branch of beekeeping. The two books will be mailed for $1.00.

DOUBLE-WALLED LANGSTROTH HIVES.

OUR old style Bay State hive is the same as the Reversible hive. One has reversible frames, and the other is adapted to the standard Langstroth frame. This hive has every good feature in its construction that the Reversible hive has, except reversing the combs.

It can be used with or without the outside case in summer; the sections can be tiered up the same, and the section case is exactly as near the brood as in the Reversible hive. We have used this style in the Bay State apiary fourteen years and with good results. The price is the same as for the complete Reversible hive.

NEWSPAPERS.

A good weekly paper is highly prized by every family.

Before sending in your subscriptions for 1888, consult our club list of some of the best papers, and periodicals published in the country.

Do not forget that our nearest money order office is at Salem, Mass. Make all money orders and postal notes payable at that office. Money may be sent in registered letters, or remittance may be made by express money orders or cashiers' checks. Fractional parts of a dollar may be sent in two-cent postage stamps. We also accept of Canadian stamps for odd change.

In future, credit will be given to none unless personally known to the Manager of the API. This does not apply to those customers who have promptly remitted when a bill has been sent them. No others need apply.

After reading this copy of the API will you kindly hand it to some beekeeping friend and call his attention to the unusual inducements offered those who will become subscribers at once?

We would like the names of a few live bee men from each county in the United States, to whom will be mailed a copy of the AM. APICULTURIST. Please send the names of only those you are quite sure will be likely to subscribe for a bee journal.

The subscription book of the API is in the hands of a member of the Manager's family and we do not often look it over. Should the journal be discontinued before the time paid for expires, kindly state the fact on a postal card and the mistake will be promptly rectified.

Every yearly subscriber to the AM. APICULTURIST is entitled to one of the best selected queens reared in the Bay State Apiary, at any time between June 1 and October 1, by remitting fifty cents in addition to the one dollar for the API.

ADVERTISEMENTS.

TERMS FOR ADVERTISING.

One inch,	each	insertion,	$1 00
Two "	"	"	1 80
Half column,	"	"	4 00
Whole "	"	"	7 00
" "	"	"	12 00

CASH WITH COPY.

The Beekeepers' Handy Book

HAS HAD AN EXTENSIVE SALE THE PAST FEW MONTHS.

It will tell you all about Queen-rearing and how to keep bees and make beekeeping pay.

300 Pages, Bound in cloth, by mail $1.10.

☞ SEE CLUB RATES (on another page).

HENRY ALLEY,
Wenham, MASS.

LIPPINCOTT'S · LIPPINCOTT'S · LIPPINCOTT'S

Leads all other Magazines
In Tales of Fiction — A New Departure
Poems of Interest
Pleasing Short Stories
Interesting Miscellany — 25 cts.
Notes of Progress
NEARLY Choice Selections
200 Original Contributions
PAGES IN EACH ISSUE Topics of the Times
Terse Gems
A Complete New Novel — Superlative Merit
By some favorite author in each No.

Giving a library of 12 new and valuable works, worth from $15.00 to $18.00 annually, at the nominal sum of 25 cents per month. Subscription, $3.00 yearly. Stories by John Habberton, Frances Hodgson Burnett, Julian Hawthorne, Lucy C Lillie, etc., etc., will appear in early issues

Circulars, giving details, etc., mailed on application

J. B. LIPPINCOTT COMPANY
715 and 717 Market St., Philadelphia

BARNES' FOOT POWER MACHINERY.

Read what J. I. PARENT, of CHARLTON, N.Y., says—"We cut with one of your Combined Machines, last winter, fifty chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make and we expect to do it with this saw. It will do all you say it will." Catalogue and Price-list Free.

Address, W. F. & JOHN BARNES,
2-87 6 mo. *No. 484 Ruby St., Rockford, Ill.*

MUNN & Co. PATENTS

ESTABLISHED 1846 — NEW YORK

After Forty years' experience in the preparation of more than One Hundred Thousand applications for patents in the United States and Foreign countries, the publishers of the Scientific American continue to act as solicitors for patents, caveats, trade-marks, copyrights, etc., for the United States, and to obtain patents in Canada, England, France, Germany, and all other countries. Their experience is unequaled and their facilities are unsurpassed.

Drawings and specifications prepared and filed in the Patent Office on short notice. Terms very reasonable. No charge for examination of models or drawings. Advice by mail free.

Patents obtained through Munn & Co. are noticed in the **SCIENTIFIC AMERICAN**, which has the largest circulation and is the most influential newspaper of its kind published in the world. The advantages of such a notice every patentee understands.

This large and splendidly illustrated newspaper is published **WEEKLY** at $3.00 a year, and is admitted to be the best paper devoted to science, mechanics, inventions, engineering works, and other departments of industrial progress, published in any country. It contains the names of all patentees and title of every invention patented each week. Try it four months for one dollar. Sold by all newsdealers.

If you have an invention to patent write to Munn & Co., publishers of Scientific American, 361 Broadway, New York.

Handbook about patents mailed free.

BEEKEEPERS' SUPPLIES.

FOR SALE

AT THE

BAY STATE APIARY,

WENHAM, MASS.

Bee Hives.

Langstroth Standard.

One hive made up, ready for use, including 21 one-pound sections..... $3 00
The same, in the flat, ready to mail... 2 50

Sections.

Falconer one-piece sections per 1,000 5 50
" " " " " 500 3 00
" " " " " 100 75

Langstroth Frames.

Material for (hanging) frames for Standard L. Hive per 100..... ...$3 00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together as is the case when the common top-bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely, price..... 50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames, 55 cts per lb.
1 " " " sections, 65 " " "

Parties ordering foundation for brood-frames should be particular to give exact size they wish the sheets cut.

Perforated Zinc.

This we can supply only in small quantities, shipped with other goods, per foot,..... 20
If sent by mail, add 10 cents per foot.

Honey Extractors.

Muth's standard, with knife,..... $11 00
" No. 2, " " 10 00

E. T. Lewis & Co., Extractors.

No. 22. 28 inches in diameter, 25 inches high, 2-frame for any size up to 12½x19; room for 25 lbs., honey below reel, and the best extractor ever made for $10 00

We sell this size only as it is the most convenient to use. This extractor is adapted to the L. frame.

Honey Knives.

Root's knife, by express,..... 70
" " by mail,..... 75

Bee Veils.

The veil has a rubber which draws the top together; it is then placed over any hat and drawn down until the elastic is over the band.

Common net, by mail..... .35

Smokers.

Alley's improved Quinby, 2¼ inch, by mail, 1.75; by express, $1 50

Feeders.

Alley's perfection winter, one of the best.
By mail,..... $ 50
" express,..... 40
12 " " 3 75

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each..... $1 00
Selected " each..... 1 25
Tested " each..... 2 00
Extra breeding queens, the best we have, each..... 3 00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be pure. Safe arrival and purity guaranteed in all cases.

We make a specialty of Italians.

Full Colonies.

We consider eight L frames well filled with brood and covered with bees a full colony. Price of such in B. S. R. hive including one set of sections, $12.00. Purchasers to pay express charges.

Books.

Quinby's New Beekeeping (cloth) post paid..... 1 50
Cook's Manual, (cloth)..... 1 25

Third Edition of the

Beekeepers' Handy Book, or 22 years experience in queen rearing. 300 pages, 100 fine illustrations, handsomely bound in cloth, by mail,.. 1 10

Queen-Rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARMING BOX and QUEEN-NURSERY are articles that no person who rears queens can dispense with.

By using the swarming-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or ten days later. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

We use the following articles in rearing queens, a full description of which can be found in the

"Beekeepers' Handy Book."

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1 25	$1 60
Swarming-box.....	1 25	
Fertilizing-hive (complete).....	50	
Fumigator for using tobacco...	25	30
Cone-feeder.....	15	20

To make the lot complete, we put in each package one drone and queen-trap, one copy of the THIRD edition of the "Handy Book," and send all for $4 50

All these articles can be packed in the swarming-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom by mail,..... .25
" " " express,..... .20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O.

Address,

HENRY ALLEY,

Wenham, Essex Co., Mass.

AMERICAN APICULTURIST CLUB-LIST FOR 1888.

Desiring to do a good thing for those who subscribe for the *Apiculturist*, we have prepared the following newspaper and magazine club-list. All yearly subscribers for the API, can get any paper on the list at the rates given in the right hand column.

Subscribers who accept of any of these papers are not debarred from receiving any premiums offered to yearly subscribers for the API. If you want any paper or magazine not found on the list, and are a subscriber for the API, we will get it for you at club rates.

The following list was prepared especially for the benefit of our readers. We can furnish any or all of the papers named to those who subscribe for the API. If any one desires to subscribe for several of the papers in the list, they can do so. Note the prices.

Not only do we make a liberal discount to those who subscribe for our journal, but each subscriber is entitled to one of our drone and queen-traps, free by mail, as well as to a discount on other goods, as per notice in another part of this issue.

Any publication wanted which is not on the list, will be furnished at a reduced rate, Please name the paper you desire.

PERIODICALS.

Weekly publications are designated by the letter "w" following the name; Semi-Weeklies "s-w"; Bi-Weeklies, "b-w"; Monthlies, "m"; Bi-Monthlies, "b-m"; and Quarterlies, "q."

Publisher's Price.	*Name of Publication.*	My Price.
	A	
$ 50	Agriculturist, Racine, Wis.....m	35
1 00	Albany Argus.....w	98
1 00	Albany Journal .....w	98
1 50	American Agriculturist, N. Y....m	1 10
1 00	American Bazaar, N. Y.....m	80
1 50	American Dairyman, N. Y.....w	1 30
1 00	American Farmer, Baltimore..s-m	90
1 00	Am. Kindergarten Magazine, N. Y. .....m	85
1 25	Am. Poultry Adviser, Zanesville, O. (with premium).....m	90
1 00	Am. Poultry Journal, Chicago..m	85
1 50	Am. Poultry Yard, Hartford.....w	1 20
1 00	American Reformer, N. Y.....m	90
1 70	American Wesleyan, Syracuse..w	1 60
2 00	Arkansas Traveller, Little Rock. w	1 60
2 00	Arthur's Home Magazine, Phila. .....m	1 40
	B	
1 50	Babyhood (care of infants).....	1 20
1 50	Ballou's Magazine, Boston.....m	1 30
1 00	Baltimore American.....w	1 00
1 00	Baltimore Sun.....w	90
2 00	Bismarck Tribune, Dakota.....w	1 90
50	Bistonry, Elmira, N. Y.....q	40
1 00	Bookmart, Pittsburg.....m	85
1 00	Boston Journal.....w	1 00
1 50	Boston Traveller.....w	1 00
1 00	Breeder's Journal, Beecher, Ill., m	80
1 00	Buffalo Commercial Advertiser..w	95
1 00	Buffalo Courier.....w	95
1 00	Buffalo Express.....w	85
1 00	Burlington Hawkeye.....w	90
	C	
1 00	Carpentry and Building, N. Y...m	80
1 50	Chattanooga Times.....w	1 25
1 00	Chicago Herald.....w	85
1 00	Chicago Inter-Ocean.....w	90
1 00	Chicago Journal.....w	1 00
1 50	Chicago Ledger.....w	1 25
1 00	Chicago News.....w	95
1 00	Chicago Times.....w	80
1 00	Chicago Tribune.....w	90
$1 00	Christian Woman, Philadelphia, m	85
1 50	Church's Musical Visitor, Cincinnati.....m	1 20
1 00	Cincinnati Gazette.....w	90
1 15	Cincinnati Enquirer.....w	1 10
50	City and Country, Columbus, O., m	40
1 00	Cleveland Leader.....w	90
1 00	Cleveland Plaindealer.....w	1 00
1 00	Clinique, Chicago.....m	90
1 50	Coleman's Rural World, St. Louis .....w	1 20
2 50	Country Gentleman, Albany, N. Y. .....w	1 95
	D	
75	Dairy and Farm Journal, West Liberty, Ia.....m	60
1 75	Davenport Gazette, Iowa.....w	1 10
1 00	Delineator, N. Y. (Buttrick's)..m	1 00
1 25	Denver Times.....w	1 10
1 00	Detroit Free Press (literary ed.).w	95
1 00	Detroit Post.....w	95
1 00	Domestic Fashion Plate, N. Y....	90
1 00	Drake's Traveller's Magazine, N. Y.....m	85
	E	
1 00	Elmira Advertiser.....w	95
50	Empire State Agri., Rochester..m	35
	F	
1 00	Family Herald and Star, Montreal.w	90
1 25	Fanciers Gazette, Indianapolis..m	90
1 50	Farm, Field and Stockman, Chicago, 20 packages seeds.....w	1 30
50	Farm and Garden, Philadelphia.m	35
50	Farm and Home, Springfield, Mass, ...m	45
50	Farm Journal, Philadelphia.....m	53
1 25	Farmers' Review, Chicago.....m	1 10
2 00	Florida Agriculturist, DeLand..w	2 50
50	Forest, Forge and Farm, Albany.m	45
4 00	Forest and Stream, N. Y.....w	3 25
2 25	Frank Leslie's Budget.....m	2 00
1 75	Frank Leslie's Pleasant Hours..m	1 60
25	Frank Leslie's Almanac....annual	25
1 00	Frank Leslie's Holiday Book. .....annual	75

G

50 Gems of Poetry, N. Y.....m 50
1 00 Gleason's Monthly Comp'n Bos., m 65
1 25 Golden Censer, Rockford, Ill.....w 1 10
50 Good Cheer, Greenfield, Mass...m 40
2 50 Good Housekeeping, Holyoke, ... bi-w 2 15
1 00 Grand Army Gazette, N. Y.....m 90
50 Green's Fruit Grower, Rochester. q 30

H

4 00 Harper's Bazar, N. Y.....w 3 30
25 Harper's Handy Series, each..... 20
4 00 Harper's Magazine.....m 3 20
4 00 Harper's Weekly.....w 3 30
2 00 Harper's Young People,.....w 1 70
1 50 Hartford Courant.....w 1 35
1 50 Hartford Post.....w 1 35
1 10 Household, Brattleboro.....m 85

I

1 25 Illinois State Jour., Springfield..w 1 10
1 00 Illus. Family Herald, Augusta, Me. (25 chromos).....m 75
1 50 Indiana School Jour, Indianapolis, m.....m 1 25
1 50 Iowa Homestead, Des Moines..w 1 15

J

75 Junior Am. Mechanic, Phila....m 65

K

1 00 Kansas City Times.....w 95
1 25 Keokuk Constitution, Iowa.....w 1 25

L

1 25 Ladies Floral Cabinet, N. Y.....m 1 10
50 Ladies Home Jour., Phila.....m 40
1 00 Leavenworth Times..... w 85
1 00 Lever, Chicago.....w 85
1 00 Lexington Press, Ky. (new 65)...w 90
3 00 Lippincott's Magazine, Phila...m 2 40
50 Literary Bulletin, N. Y..... 50
2 00 Literary Life, Chicago.....m 1 25
30 Little Christian, Boston.....s m 30
1 50 Little Folks, N. Y. (illustrated)..m 1 25
1 00 Louisville Commercial, Ky.....w 90
1 50 Lowell Journal, Mass.....w 1 45

M

1 50 Manufacturer and Builder, N. Y.m 1 30
1 00 Maryland Farmer, Baltimore....m 85
1 00 Masonic Chronicle, Columbus, O.m 70
1 00 Mechanics, N. Y. .....m 80
1 00 Medical Bulletin, Philadelphia..m 90
1 00 Metal Worker, New York (new 90)w 1 00
1 25 Michigan Farmer, Detroit.....w 1 15
2 00 Mind and Matter, Philadelphia..w 1 90
1 00 Modern Miller, Moline, Ill.....m 90
1 00 Montreal Gazette, Canada.....w 85
1 10 Montreal Witness.....w 90
1 50 Mother's Magazine, N. Y.....m 1 15
2 00 Muscatine Journal, Iowa.....w 1 90

N

1 00 Nashville American, Tenn.....w 1 00
1 00 National Poultry Monitor, Springfield, O..... .....m 90
1 00 National Republican, Washington .....w 75
40 New Dominion Monthly.....m 30
1 00 New Haven Register.....w 90
1 50 New Orleans Picayune.....w 1 15
1 50 New Orleans Times-Democrat. .w 1 15
1 00 New York Herald.....w 98
3 00 New York Independent.....w 2 65
1 00 New York Sun.....w 93
1 00 New York Times.....w 98
1 25 New York Tribune.....w 95
1 00 New York Witness.....w 95
1 00 New York World.....w 90
1 00 Norfolk Virginian.....w 85

O

1 00 Ohio State Journal.....w 85
1 00 Oil City Derrick, Pa.....w 90
2 00 Olive Branch, Utica, N. Y.....m 85
1 00 Omaha Herald.....w 95
1 50 Orange Co. Farmer, Port Jervis.w 1 36

P

1 50 Painter's Magazine. N. Y.....m 1 20
1 00 Pansy, Boston, Illustrated.....w 90
2 00 Peck's Sun, Milwaukee, Wis.....w 1 75
1 00 People's Fireside Jour., Boston..m 75
60 People's Magazine, Philadelphia.m 55
1 50 Peoria Transcript.....w 1 20
2 00 Peterson's Magazine.....m 1 50
1 00 Philadelphia Press. .....w 95
1 00 Philadelphia Times.... .....w 1 60
75 Picture Gallery, Chicago.... ....m 60
1 50 Pittsburg Commercial Gazette...w 1 35
1 06 Portland Advertiser, Me.....w 90
1 00 Poultry Bulletin, N. Y..... .....m 80
1 00 Poultry and Farm Journal Minneapolis.....m 75
50 Poultry Keeper, Chicago.....m 45
1 25 Poultry Monthly, Albany.....m 95
1 25 Poultry World, Hartford, Conn..m 95
2 00 Practical Farmer, Philadelphia.w 1 15
1 00 Practical Teacher, Chicago ...s-m 75
1 00 Providence Press.....w 90
50 Purdy's Fruit Recorder, Palmyra.m 50
65 Purdy's Fruit Recorder, Palmyra, with choice of prem.....m 65

Q

1 50 Quiver, N, Y., illus. reprint.....m 1 25

R

1 00 Richmond Dispatch.....w 1 00
50 Ridley's Fashion Magazine, N.Y., q 45
1 00 Rochester Democrat and Chron., w 85
1 00 Rochester Herald .....w 90
1 00 Rochester Post Express.....w 85
1 00 Rochester Republican. .....w 85
1 00 Roller Mill, Buffalo, N. Y.....m 90
1 50 Rural Californian, Los Angeles..m 1 15
2 00 Rural New Yorker and seeds, N.Y.w 1 70

S

50 Sabbath Reading, N. Y.....w
1 00 Sailor's Magazine, N. Y.....m 50
1 25 Savannah News, Ga.....w 1 40
2 00 Saturday Night, New York.....w 1 15
1 00 Science Observer, Boston.....q 29
1 00 Scientific American, N. Y.....w 3 75
1 00 Selma Times-Argus, Alabama...w 1 05
1 00 Shakespearians, Philadelphia...m 1 00
1 50 Southern Cultivator, Atlanta ...m 1 30
1 25 Southern Planter, Richmond.....m 1 13
50 South and West, St. Louis ....s-m 16
1 50 Spirit of Missions, N. Y.....m 1 95
1 00 St. Louis Globe-Democrat.....w 00
1 00 St. Louis Republican.....w 75
1 00 St. Paul Pioneer Press.....w 00
1 00 Stoddard's Magazine, N.Y, chro.m 00
1 00 Street's Monthly, Waco, Tex....m 45
1 25 Swine Breeder's Journal, Indianapolis .....m 1 00
1 50 Syracuse Journal.....w 1 05

T

1 90 Texas Farm and Ranch, Austin, s-m 75
1 00 Toledo Blade, Nasby's Paper....w 90
1 00 Toledo Telegram..... .w 95
1 00 Toronto Globe, Canada.....w 95
1 00 Toronto Mail.....w 90
1 00 Torrey Botanical Bulletin, N.Y.s-m 96
1 00 Tribune and Farmer, N. Y.....w 85
1 00 Troy Telegram, N. Y.....w 80
1 00 Troy Times..... ..w 95

U

1 00 U. S Miller, Milwaukee.-..... ...m 90
85 U. S. Gazette, Washington, D. C., pensions .....m 60

1 50	Utica Herald	w	1 40
1 50	Utica Observer (new 1 30)	w	1 50

V

1 00	Vesper Bells, Philadelphia	w	90

W

3 00	Wallace's Monthly, N. Y.	m	2 65
1 00	Washington Post	w	85
2 50	Washington Republic	w	2 15
1 00	Washington Star	w	95
1 00	Wayne County Courier, Detroit,	w	85
1 10	West'n Agriculturist, Quincy, Ill.	m	85
60	Western Machinist, Cleveland	m	55
50	Western Plowman, Moline, Ill.	m	40
2 00	West Shore, Portland, Oregon	m	1 65
1 00	Wheeling Intelligencer	w	95

Y

2 00	Yankee Blade, Boston (with prem.)	w	1 10
1 00	Y. M. C. A. Watchman, Chicago	m	95
30	Young Folks' Circle, Springfi'd, O.	m	30
2 50	Young Men of America, N. Y.	w	2 00
1 75	Youth's Companion, Boston, new subs.	w	1 25

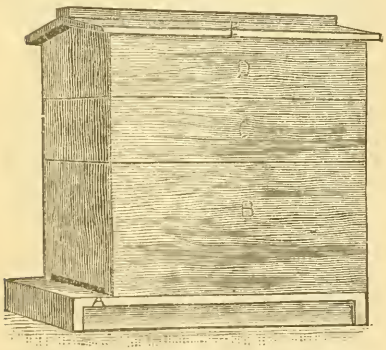
Special to Beekeepers.

1 00	American Bee Journal	w	85
1 00	Canadian Bee Journal	w	85
1 00	Gleanings in Bee Culture	s-m	90
50	Rays of Light	m	40
1 25	Apiary Register (by T. G. Newman)		90
75	Bees and Honey (by T. G. Newman)		65
1 25	Beekeepers' Guide (by A. J. Cook)		95
50	Dict. of Prac. Apiculture (by John Phin)		45
15	Extracted Honey (Dadant & Son)		15
05	Honey as Food and Medicine (by Newman)		04
2 00	Langstroth on the Hive and Honey Bee		1 50
1 50	Quinby's New Beekeeping (by L. C. Root)		1 15

THE BAY STATE BEE HIVE

WITH REVERSIBLE BROOD-CHAMBER

AND REVERSIBLE SECTION RACK.



THIS CUT REPRESENTS THE WINTER CASE OF THE BAY STATE BEE HIVE.

We believe this hive will prove satisfactory to 90 per cent of all who test them.

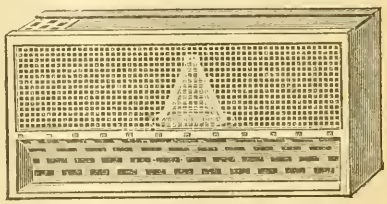
Hive complete, 3.00
" in flat, 2.50

H. ALLEY,
Wenham, Mass.

ALLEY'S

DRONE AND QUEEN-TRAP.

RELIABLE, CHEAP, PRACTICAL.



PRICES FOR ALL THE MATERIALS IN THE FLAT.

One-half dozen, one made up (seven in all) $2.00
One dozen, one made up (thirteen in all) $3.50

Those who purchase the traps of us can sell them to whom they please, and where they can find a market for them.

METAL PARTS FOR THE TRAPS.

By express, 15 cts. per trap. By mail 22 cts. per trap.

INDIVIDUAL RIGHTS.

Any beekeeper can purchase a farm or individual right of us for $2, and to all who do so will be sent by mail, one of the latest improved traps.

Address
HENRY ALLEY,
Wenham, Mass.

The Drone and Queen Trap.

MR. ALLEY:

Your drone and queen-trap has robbed swarming of all its terrors.

MISS G. P. S.

The drone and queen-traps came all right. I have tried one of them in hiving a swarm of bees and it worked all right.

J. S. BARB.

Price 65 cts. by mail.

FOLDING BOXES.

OUR CARTONS for enclosing SECTION HONEY are the BEST and LOWEST PRICED in the market. Made in one-piece. With or without TAPE Handles. With MICA Fronts or without, in the FLAT or set up. PRINTED or not. Any way to suit. We are bound to satisfy you. We have just put in special Machinery for their manufacture and are prepared to fill orders promptly.

Price per 1000, $ 7.75, printed.
" " 10,000, 60.00, "

Full Price-List Free, Samples 5c.

14 oz. GLASS JARS $5.25 per gross, including CORKS & LABELS. 1 1-2 & 2 gross in a Case. Catalogue of Honey Lables free.

A. O. CRAWFORD,
6-87-6 *S. Weymouth, Mass.*

BEES AND QUEENS.

Here is a chance for all that want to buy

Italian, Hybrid or German Brown Bees

FOR 1887.

No foul brood, and prices low. Send two cent stamp for price list to

THOMAS GEDYE,
3-87-1yr. LaSalle, LaSalle Co., Ill.

QUEENS!

BENTON'S BEST BEES.

Select, choice, tested Queens, each $5.

Sample bees from queens advertised, by mail, 10 cents. 75 full colonies. No cheap queens.

A. M. FIRMAN,
Quasqueton,
3-87-1yr. Buchanan Co., Iowa.

DEALERS' LIST.

NEW YORK.

W. T. Falconer, Jamestown, supplies, etc.

C. M. Goodspeed, Thorn Hill, Onon. Co., bees and queens.

J. Van Deusen & Sons, Sprout Brook, Mon. Co., flat bottom comb foundation, wholesale and retail.

F. J. Crowley, Batavia, supplies, foundation, bees and pure queens of any race.

MAINE.

E. B. Leighton, Falmouth, supplies, breeder of choice Italian bees and queens.

ILLINOIS.

F. A. Snell, Milledgeville, Carroll Co., Italian bees, beehives, sections, extractors, veils, smokers, comb foundation, etc.

MICHIGAN.

A. J. Cook, Lansing, Pub. Cook's Manual, or Bee-keeper's Guide.

OHIO.

C. F. Muth, 976-978 Central Ave., Cincinnati, supplies.

D. A. McCord, Oxford, Butler Co., bees, queens and supplies.

E. T. Lewis & Co., Toledo, apiarian supplies. 1886.

Frank A. Eaton, Bluffton, Allen Co. Bees, Queens and Poultry.

IOWA.

J. M. Shuck, Des Moines, Patentee, and Manufacturer of the invertible hive and surplus case.

Oliver Foster, Mt. Vernon, bees, queens, adjustable honey-case and supplies.

INDIANA.

A. B. Miller & Son, Wakarusa, Elkhart Co., supplies.

MASSACHUSETTS.

Wm. W. Cary, Colerain, successor to Wm. W. Cary & Son, breeders, bees, queens, and dealer in apiarian supplies. Price list free.

WEST VIRGINIA.

C. L. Eakin, Wadestown, Monongalia Co., W. Va. Italian Bees and Queens.

The Beekeepers' Handy Book,

Providence, R. I.

HENRY ALLEY, Esq.

For beekeepers, generally, I believe your "Handy Book" is the best "bee book" extant.

GEO. A. STOCKWELL.

Price, bound in cloth, postpaid, $1.10.

DR. TINKER'S SPECIALTIES

THE finest WHITE POPLAR Sections and the best PERFORATED ZINC ever offered to beekeepers. Our new machine makes 50,000 perforations in a day. We also claim the finest strain of BEES for comb honey—the Syrio-Albinos. Price-lists of QUEENS and Supplies free. Samples of sections and zinc, three cents.

Address, DR. G. L. TINKER,
NEW PHILADELPHIA, O.

A YEAR AMONG THE BEES.

A work of 128 closely printed pages. Being a talk about some of the implements, plans and practices of a beekeeper of 25 years experience, who has for 8 years made the production of honey his exclusive business.
Bound in cloth, by mail, 75c.

DR. C. C. MILLER,
Marengo, Ill.

HEADQUARTERS FOR BEEKEEPERS.

CARDS AND STATIONERY.

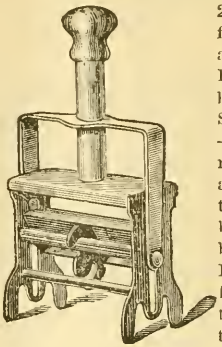
Besides our beautiful eight color instructive Chromo card, we have plain designs; also Fancy cards, and fine two and three letter *monograms*, all at astonishingly *low prices*, suitable for business and amusement for old and young. 300 envelopes 300 note heads $1. Circular and Samples free. Package 25 cards, 10 cents, neat box Cards and Sample honey candies 15 cents.

Address
J. H. MARTIN,
Hartford, N. Y.

SAVE PRINTERS' BILLS

BY USING A

SELF-INKING RUBBER STAMP



2,000 impressions for 10 cts. Will last a life time. It prints Envelopes, Letter-heads, postal cards, Sections, Clothing, —everything. Your name, occupation and address, with the machine and bottle of ink, sent by mail for $1.00; Extra bottle of ink for 12 cents. Show this advertisement to your friends.

Send me an order for 10 stamps, and get your own free. Agents wanted everywhere. Send for catalogue and terms.

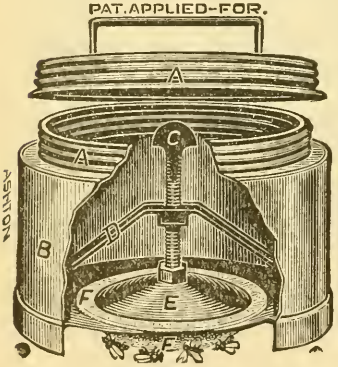
Address, GEO. T. HAMMOND,
Oct., 1887. *Brockport, N. Y.*

SUBSCRIBE NOW

AND GET

The American Apiculturist

PERFECTION BEE FEEDER.



The "PERFECTION" having been thoroughly tested, and proved of inestimable value in Bee Culture, the undersigned, a practical apiarist, is prepared to furnish the same at reasonable prices, and the usual discounts to dealers. Among the many points in which this Feeder excels all others are the following.

The supply of food can be perfectly regulated.

The food will not become rancid, nor sour, and is strained before it reaches the bees.

The same method is used in feeding as provided in nature.

The "PERFECTION FEEDER" is simple in construction, well made, readily cleansed and durable.

It is most admirably adapted to the use for which it is intended, and will give entire satisfaction to those who will give it a trial, as its merits are unquestioned.

Prices for sample Feeder, by mail, postage paid:

4 lb. Feeders 50 cts. 6 lb. 60 cts. 10 lb. 70 cts.
For one dozen PERFECTION FEEDERS F. O. B.
4 lb. Feeders, 3.50. 6 lb. 4.50. 10 lb. 5.50.

Address, M. E. HASTINGS,
New York Mills, Oneida Co., N. Y.

12—86—1y.

SUPPLEMENT

TO THE

AMERICAN APICULTURIST.

WENHAM, MASS., NOVEMBER 1, 1887.

Remember that all who subscribe or renew at once their subscriptions to the Apiculturist will get the journal, including this number, fourteen months, for $1.00. Also, free by mail, one of the latest improved Drone and Queen-Traps.

This is the first supplement ever issued from the office of any bee journal.

For the American Apiculturist.

NOTES AT RANDOM.

A. NORTON.

A GOOD WORD FOR THE BAY STATE REVERSIBLE BEE-HIVE.

FRIEND ALLEY:

As I have not time to write much and cannot think fast only when an idea or subject takes possession of me, I will confine myself to a few notes on two or three matters.

Candor demands that I should acknowledge my mistake in doubting the advantages of your new hive. I have used eight or ten of the Bay State bee-hives this season, and the result has been quite favorable. Briefly, I can recount the following points in its favor: 1. Simplicity and cheapness are important features. 2. Reversing either the frames singly or the whole brood-nest in a body is equally easy. 3. It is easily moved without disarranging frames. 4. One number of frames is about as convenient as another, either more or less. Hence you can expand or contract laterally at pleasure without need of cumbersome division-boards. 5. For tiering up, the projecting end bars secure the right space between chambers with the least trouble, and the least danger of change by shrinking. 6. Frames are easily removed and replaced. Main danger of crushing bees is at bottom where frames rest. 7. Sectional chambers or deep ones can be used at option. And I believe that good fit and interchangeability of parts cannot be more easily attained in any hive than in this one. 8. No building comb between ends of frames and ends of hives at odd and idle times. And, in case of bridged or bulged combs, frames can be taken out with a minimum of danger to bees and trouble to yourself. 9. A sectional chamber may itself be made into a fair swarming box from which you do not have to dump the swarm. This is, of course, where one does not use the queen and drone-trap and uses only narrow foundation starters.

MARKETING HONEY.

I consider that two propositions in Mr. Woodward's article, last issue, cover the principal part of the marketing problem.

These are: 1. Cultivate the demand at home and abroad leaving the supply to be regulated by the demand; and 2. encourage the manufacture of various articles from honey. I cannot add anything new to these ideas. In fact several persons have advanced them before.

I will only recall attention to them for the sake of emphasis, and this at the risk of some critic pinning me down by asking "and who said it wasn't?"

HIT THE NAIL ON THE HEAD.

I think that Mr. Robbins has hit the nail on its head in his article in the October number about bees knowing each other. I can support his argument by observations of a similar nature.

For instance, on one occasion I removed a breeding queen, for a specific purpose, to the strongest colony I could find not five minutes after their own queen had been removed. She was large and heavy with eggs, and I had no sooner placed her carefully on a comb in her new residence than she began looking for a cell to lay in as if nothing had happened, while the bees received her as if they did not know the difference. And so the affairs of that realm went right on without any interregnum. I have had similar experience more than once; while, on the other hand, I have replaced queens in their own hive after a few minutes of absence when their excited actions would cause the bees to ball them at once.

THE HONEY CROP IN CALIFORNIA.

The few reports that I receive from time to time continue to show a remarkably short crop, even in the most favored parts of California. It is a noteworthy coincidence that this scarcity should occur all over the United States and Canada at the same time.

Gonzales, Cal.

The Apiculturist for September came a few days ahead of time. Under the able management of Mr. Alley it improves each month. So far as valuable matter is concerned, it is one of our best apicultural periodicals. It is well printed.—*American Bee Journal.*

Diseased Bees. In looking our bees over a few days ago, a colony was noticed to have strong symptoms of the "shaking palsy," or the nameless disease. The queen in that hive came from Vermont, but was fertilized in the Bay State Apiary. The colony diseased was one of the best in the apiary and we did not care to lose it, and so salt and water, (quite a strong brine), was applied immediately. The top-board, or honey-board more properly, was removed and about a pint of the salt brine was dashed over the bees and combs. That particular colony was watched closely for about a week. In the course of a few days all the diseased bees, perhaps two hundred in all, were driven from the combs and were clustered at the bottom of the frames near the entrance. The diseased bees are known and distinguished from the healthy bees by their bright and shiny bodies. One warm day (Sept. 23) the bees seemed to be driving the shiny bees out. As they came out they were destroyed; and on Sept. 27, there were only two diseased bees to be seen about the hive. The brine had worked an immediate cure.

The black and shiny appearance of infected bees is not owing to the disease with which they are troubled but by the constant work and gnawing which the healthy bees are doing to them for the purpose of ejecting their sickly companions from the hive.

Since writing the above we find that Professor McLain has used brine as a remedy for the nameless disease, a fact showing that the Professor has read the "Api" carefully.

We need not say that what Professor McLain says of foul brood is correct.

All who Subscribe for the Apiculturist, at any time, will receive one

of our combined Drone and Queen-traps free by mail. This is our method of introducing the APICULTURIST and our Drone and Queen-traps into every apiary in the United States.

Dundee, Mich.

DEAR SIR:—The queen came last night and is a beauty. Hope she will prove as good as the one I got of you six years ago. I sold the colony she was in and it swarmed four times in May. I am not mistaken in the queen, as I clipped her wings when she was introduced. Three years ago all my bees died but the colony above referred to.

I have one colony of those worthless Albinos. The best bees I have for wintering are those I bought of you. Yours,

MINER FLEMING.

Patterson P. O., Tex.

MR. ALLEY:

I want to get a good queen of your strain, as I see they are praised very highly by many beekeepers. As for the APICULTURIST, I cannot give it too much praise, judging from what I have seen of it.

Out of twenty-four young queens I reared to supersede some black queens, only two or three were mismated. I think I did well, as I am only in the A B C of bee culture.

N. M. MIDDLEBROOK.

NOW IS THE TIME.

Send $1.50 and get the AM. APICULTURIST one year, and a copy of the BEEKEEPERS' HANDY BOOK.

The book contains 300 pages, 100 fine illustrations, is handsomely bound in cloth and sent to each subscriber by mail, for fifty cents in addition to one year's subscription to the "Api." Regular price of book, $1.10 by mail.

This work treats of the best methods for rearing queens, and is pronounced by Rev. L. L. Langstroth to be "the *best* authority on this important branch of beekeeping."

We do not advertise to give premiums to those who subscribe through other parties. We pay news' agents a percentage on all subscriptions sent us, and if you choose to give the agent a profit instead of sending direct to us, it is no fault of ours.

Tustin City, Cal.

MR. ALLEY:

The queen and bees came to hand, all right, nary dead bee in the cage. Came to the office on the 20th of Sept., fifteen days from the time I sent the order. Thank you for such a fine looking queen.

Introduced the queen according to your printed instructions and she is laying all right. JEFF WILLIAMS.

AGENTS FOR DRONE-TRAPS.

Messrs. Thos. G. Newman & Son, 925 West Madison St., Chicago, Ill., are our agents for the sale of the Drone and Queen-traps. Parties west of Chicago, as well as those residing within a radius of a few hundred miles of that city, who desire from one dozen to several dozen traps, can save something in freight and express charges by ordering of the above firm. All who can conveniently do so should order traps early, as the trade in them the coming season will be immense, and there may be some delay in filling orders later in the season.

Sevita, Tex.

SIR:

I received the queen, introduced her all right. She is very prolific and her progeny is very nice. Many thanks. The bees are doing very well now, but did very badly up to Aug. 1. Shall make plenty to winter, and perhaps have a surplus. M. SIMPSON.

COOK'S MANUAL

OF THE APIARY.

IT SHOULD BE IN EVERY BEEKEEPER'S LIBRARY.

PRICE $1.25.

A. G. COOK,
Author and Proprietor.
Agricultural College, Mich.

APIARIAN SUPPLIES

MANUFACTURED BY

W. T. FALCONER, - JAMESTOWN, N. Y.,

Are unsurpassed for fine **QUALITY** and **WORKMANSHIP**. A specialty made of all styles of the **SIMPLICITY HIVE**. The "**FALCON**" **CHAFF HIVE** with Movable Upper Story Continues to Receive the Highest Recommendations as Regards its Superior Advantages for Wintering and Handling Bees at all Seasons.

The **CHAUTAUQUA HIVE**, being a winter hive with absolute dead air spaces, in place of chaff, is rapidly gaining favor.

It is nearly as cheap as the ordinary Simplicity Hive. Is light and convenient for both winter and summer management.

Also manufacturer of

"FALCON" BRAND FOUNDATION.

WILL PAY HIGHEST PRICE FOR BEESWAX

My large factory will soon be ready to occupy. In this factory I shall have facilities for manufacturing treble my former capacity.

I have two rooms of 8,000 square feet each of floor surface, and have over 20,000 square feet that will be used exclusively for the manufacture of wood work for Hives and their belongings.

Office, Store House, Wax Room and Tin Shop, being in adjacent buildings.

The power consists of a 60 horse power, high pressure, automatic engine, and a 40 horse power turbine water wheel.

The foregoing brief description shows that my facilities will be unsurpassed for turning out large quantities of Goods, and my reputation for quality and excellence is already established.

DEALER IN A FULL LINE OF BEEKEEPERS' SUPPLIES.

Send for Large Illustrated Catalogue Free.

The American Apiculturist.

A Journal deboted to practical Beekeeping.

ENTERED AT THE POST-OFFICE, WENHAM, AS SECOND-CLASS MATTER.

Published Monthly. HENRY ALLEY, MANAGER.

VOL. V. WENHAM, MASS., DECEMBER 1, 1887. No. 12.

We deal in first-class apiarian supplies of all kinds, lowest prices. Prompt shipment. Send for price list.

Established in 1883. Terms: $1.00 per year, 50 cents per six months, 25 cents per three months. Cash in advance.

Any yearly subscriber is entitled to one of our selected queens anytime between June 1 and Oct. 1, by remitting 50 cts.

Address all communications, AMERICAN APICULTURIST, Wenham, Mass.

For the American Apiculturist.

SOMETHING ABOUT BRITISH BEE-HIVES.

MY DEAR API:

We are ever on the alert for something new in the way of bee-gear, and our eyes are in a state of tension westward to see what the states have to show us. We had heard of the latest thing in the way of hives that had evolved from the brain of our clever friend Heddon, and had wondered what it was like; until, last October, when Mr. D. A. Jones of Canadian fame gave us an opportunity of discussing its shape and make at a conversazione of the British Beekeepers' Association, held at the Indian and Colonial Exhibition, London.

When staged on the platform, the resemblance between the "Heddon" and a hive known for many years in England as the "Carr-Stewarton" was at once apparent. This hive is seldom seen now but was thought much of when first brought out. Mr. Jones evidently knew nothing then of the existence of such a hive, but he has had an opportunity of seeing it since, I believe, at Liverpool. But as I assume few beekeepers in the states know anything of its existence, history or characteristic features, I purpose giving them to the fraternity through the columns of the API, first to show my appreciation of your enterprising journal and also to express my regard for American beekeepers generally.

I have often wondered when bees were first kept in this old country; it was evidently a very long time ago. The other day I stumbled upon a cut taken from some old tapestry, illustrating our early Saxon beekeepers, which I thought would interest you so I had it reproduced and here it is (Fig. 1).

FIG. 1.

The artist that designed the tapestry was no very great naturalist, his bees are more like birds than bees, but in some out-of-the-way places they are even now called "bee-birds" by some of the old-fashioned people.

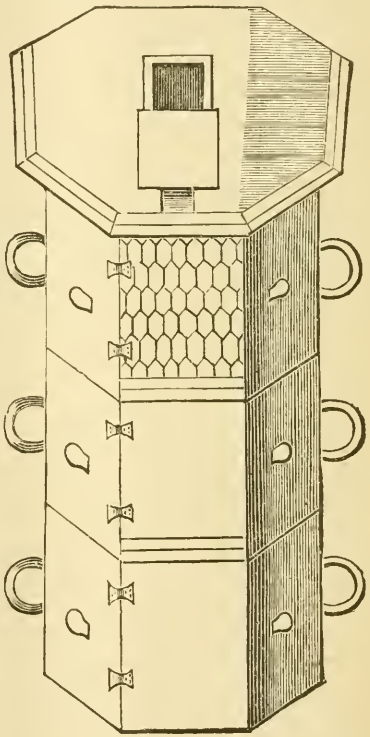
It is swarming time evidently, and the hives are the old-fashioned straw skeps covered with straw hackles as you will often find pictured in old books, or on the title

page of the *British Bee Journal* or the cover of *Gleanings*. In these days beer was unknown, sugar there was none, except nature's pure sugar "Mel," which was used for all sweetening purposes as well as for making the popular beverages "mead" and "methylin" (the drink of the gods (?). A bonnie people were those old Saxons; they wore short garments and short hair, close shaved their beards, were as strong as giants and nearly as big in comparison to the Britons whom they conquered; they were brave, chivalrous and generous; they loved war but hated diplomacy, preferring to settle matters by their strength of arm to the more civilized (?) methods of palaver. They were somewhat vain, as they practised tattooing and wore ornaments; their greatest foe was their stomachs, for they fell victims at last to strong drink "which biteth like a serpent and stingeth like an adder."

There are many thousands of these straw-skep hives in use in this country yet; I have some myself for "auld lang syne," hackles and all complete, but it is seldom you see a hackle nowadays. These straw hives are evidently a copy from the bees' natural lodging place — the crown of a hollow tree — and were the only kind of hive in use for some hundreds of years.

In 1609 Dr. Chas. Butler wrote a book about bees and hives entitled the "Feminine Monarch," and these straw hives are the only kinds he mentions. He is called the "father of British beekeepers." He practised "inverting," as he gives directions how to invert the old stock and place another on it and so get the top one filled with honey; and he also gives instructions how to remove it when filled. Later he omitted this from his book, so probably he found it did not answer.

In the year 1652, octagon-shaped boxes made of wood were used as bee-hives by the Rev. Wm. Mewe, minister of Eastlington, in Gloucestershire. They were also used in Scotland. In April, 1675, king Charles II granted John Geddie letters patent for his octagonal-shaped wooden beehives. This was the only patent granted for beehives in England, until very recently; and in the matter of patents in bee gear, we haul down the flag to the U. S. beekeepers. This was the step from straw to wood and with it came "storifying."



Geddie's boxes. Fig. 2.

Geddie's boxes (fig. 2) were simply octagon in shape with a crown board, in the centre of which was cut a five-inch square hole; the boxes were also fitted with handles and had doors in front lined with

glass for observatory purposes. The size of these boxes I have not been able to ascertain, but four years later Rusden wrote a book describing the same kind of boxes, giving the sizes as sixteen inches across and ten inches deep. The bottom box was used for wintering, and the others were placed on the top in summer as required, thus securing the surplus on what we now know as the "storifying" system.

About the year 1819, Robert Kerr of Stewarton, or Stuart town, Ayrshire, Scotland, a clever cabinet maker, took these octagon boxes in hand and greatly improved them. He was known as "Bee-Robin." He removed the crown boards and placed bars distanced $1\frac{1}{2}$ in. from centre to centre that the bees might attach their combs to them. Between these bars were spaces $\frac{3}{8}$ of an inch wide, into which were fitted movable strips called slides. They ran in grooves and were capable of being withdrawn entirely. This hive had three brood boxes, each six inches deep; the super boxes were three and one-half or four inches deep only; the cut (Fig. 3) gives you three brood boxes and one super box and the slides are partly withdrawn to show the three-eighths spaces in the honey board (?). Kerr's hive was also fitted with shuttered windows front and back; each brood box had an entrance closed with a slide one of which is shown partly withdrawn. This made all the brood-boxes interchangeable, and the grooves in the top of each box, from which the strips were withdrawn, were stopped at the ends by short plugs.

We have no record that Kerr ever practised "inverting," although his boxes admitted of being interchanged. So far we have had "inverting, storifying, bars, a divided brood-nest, interchangeability of brood-boxes and a honey-board."

This hive was farther improved about thirty years ago by a Scotchman who is known among bee-keepers as "a Renfrewshire bee-keeper" who made two brood boxes only, each nine inches deep, and fitted them with movable bar frames; the slides were still retained between the top-bars of the frames, and the frames were distanced one and one-half inches from centre to centre. The super boxes were also fitted with bar frames which were distanced two inches from centre to centre and were also fitted with slides. These super boxes are

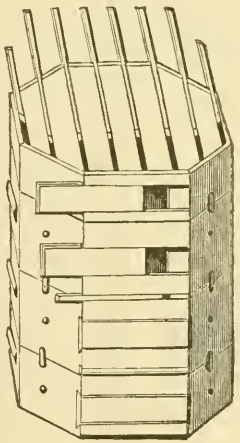


FIG. 3.

made 3, $3\frac{1}{2}$ and 4 inches deep whichever the beekeeper may prefer, and the bees have filled as many as seven such in one season.

The illustration (Fig. 4), from a photograph, shows a "Renfrewshire Stewarton" in full work. It rests on a six-inch drain pipe sunk in the ground, a long bung of wood fitted into the upper end of the pipe, to which the floor-board is securely fastened. In exposed places this hive has been secured with guy ropes to prevent its being blown over. This hive is seldom now seen out of Scotland ex-

cept where it is kept by a few as a novelty, but it has frequently given 200 pounds surplus comb honey free from brood in one season.

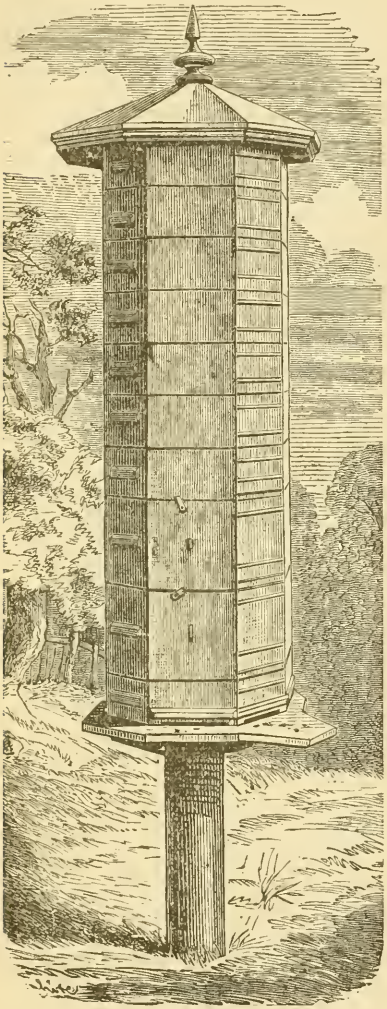


FIG. 4.

We next get the "Stewarton" hive altered from its octagon shape to square, but the other features were preserved. This was done about the year 1872 by the late Mr. C. W. Smith of Totteridge, Herts. He named it the "Carr-Stewarton" as a compliment to his friend Mr. Carr of Clayton Bridge, Manchester. (The Carrs formerly spelled their name "Kerr.") The two body boxes were 15 inches square and 6 inches deep, the super boxes 4 inches deep only, and the frames in the super boxes were set two inches apart as in the "Stewarton."

Externally, it looks like a "Heddon" with a sloped, ornamental roof; and when Mr. Jones exhibited his "Heddon" in London last year many of us at once cried, "that is our old friend the "Carr-Stewarton" which was not far wrong, as with the exception of the screws for compression there is nothing new in the "Heddon" that is not to be found in the "Carr-Stewarton." "Inversion" is given up for "interchanging," and the "bee-space" is now lightly valued.

We have at least one able advocate of the shallow frame in England who uses a hive very similar to the "Carr-Stewarton." It is Mr. W. B. Carr, one of the coëditors of the *Beekeepers' Record.* I maintain it is with hives, as it is with ploughs and with men, one is as good as the other *and more so.* Given a hive that is capable of being expanded and contracted and in which the bees can be kept warm and dry, and the rest depends more on the owner than on the particular kind of hive.

I need scarcely say I have not attempted to give you a sketch of the history of the bar-frame hive in England, that has run on side by side with what I have given you; which is but an imperfect account of a storifying, interchangeable-shallow frame, divided brood-chambered hive which we have among us, and which has given good results, especially before the days of sectional supers. The latest move with us seems to run in the direction of a deeper frame

than our "standard" size which is eight and one-half inches deep.

I hope the perusal of these notes will afford some pleasure to the readers of the API as writing them has to one who is known among British beekeepers as

AMATEUR EXPERT.

For the American Apiculturist.

HOW I WINTERED MY BEES.

Z. T. HAWK.

PREVIOUS to the winter of 1886–7 I wintered my bees very successfully by packing on the summer stands. Each colony was left with a plentiful supply of golden-rod honey and was prepared for winter by placing an arrangement something like a "Hill's device" on top of the frames and then covering snugly with a quilt. Some of my colonies will this winter be tried with an inverted wooden butter dish on top of the frames and a quilt over that.

The packing was done as follows: A dry-goods box was stood on end and three or four inches of chaff were sprinkled in. The hive was then set back in the box and a bridge placed over the hive entrance. This bridge was full width of the entrance, two inches high and long enough to reach from the hive to an inch beyond the edge of the packing box. A board was then fastened across the front of the box and rested firmly on top of the bridge so as to hold the latter in position. Chaff was then filled tightly in on all sides of the hive and other boards added until the whole box was firmly closed up so that no snow could enter. Before putting all the chaff in, however, I was careful to see that the quilt was tucked in tightly all around and that a thin chip was placed under the edge of the cap or upper story. I tried some colonies without the cap but they did not seem to do so well. Others were tried with the cap fitted down tight, but moisture gathered in them and the quilts got wet. An inch auger hole in each end of the cap covered with wire cloth would do as well as the chip, but the latter was more convenient. I wintered from five to twenty colonies this way for four winters and lost only three. The rats got under two of those colonies and by their digging and thumping so annoyed the bees that they scattered over the combs and froze to death; the third colony was lost by my carelessly leaving the snow banked over it two or three weeks. Just here I want to say that whenever I have left snow drifted over my bees more than two or three days they have become uneasy and immediately showed signs of dysentery.

If you have a small apiary and plenty of time the plan I have detailed for wintering is, I believe, as safe as a cellar. The greatest objection is the cost of boxes; but if the hives were close together in the summer one can economize some by laying a long box on its side and packing two colonies in it; and by exercising a little care the boxes may be made to do duty several winters.

Last year, having but little time to devote to my bees, I concluded to try my luck at cellar wintering. Having no cellar suitable for the purpose one had to be constructed. Various matters delayed me and the work was not commenced until the Friday after Thanksgiving. Meanwhile a heavy snow had fallen and my bees had passed through their first experience of the winter buried four feet in the snow with not even the quilts on the frames.

My cellar was made 16 feet long, 5 feet wide and 6 feet deep with a door at one end. The ground was frozen a foot deep and the removal of this crust cost us a good deal of extra labor. Two men performed the work in one day and partly covered the excavation. Boards were laid along the edge of the cellar and round cedar posts laid across, two feet apart. On these I threw old boards, placed a 2 x 3 inch ventitor near each end and covered the whole, first with the dirt we had thrown out and then with coarse litter from the stable. A rough door frame was fastened in, a door was hung and the job was done at a cost of $4.50, including labor, posts and all. Saturday morning my cave was steaming, but I had no time to wait, so in went the bees. The first row rested on a board on the ground and extended the whole length of the cave. The caps were removed, the quilts put on and a long board resting on sticks covered the tops of all the hives in the row. Another row was placed on top of these and the work was done. For a few days the door was left open to give the cellar a chance to dry a little, but the weather turned cold and the doorway was packed full of hay. The frost came out of the walls and the vapor rose from the ventilators in a cloud. At first the thermometer, lowered through a ventilator, showed 50° ; later, when the weather got colder it went to 45°, then to 40°. When the mercury went to 20° below zero outside it went to 38° above in the cellar and then I began to be alarmed. But an inspection of the interior showed the bees alive, quiet and well. I now closed the ventilators and kept them closed through all the cold weather, but the temperature remained at 38° for three months and the bees wintered well, in spite of the cold and dampness. Nearly all the colonies had the dysentery badly, but I never had bees in better condition in May. My only losses were from robbing late in the spring.

This winter my bees will be placed in a cellar exactly like the one they occupied last winter, but the soil will be given ample time to dry out and the cover will be nearer frost proof. I will report my degree of success next spring.

Audubon, Ia., Oct. 11, 1887.

For the American Apiculturist.

REPORT FROM TEXAS.

L. STACHELHAUSEN.

I have had no time to read very much in bee-papers this summer (I take six of them) and so I did not renew my subscription for the API. But now, having more time, I see I cannot do without your journal and herewith renew my subscription.

In our section of Texas we had the smallest crops this year of any since I came to this country ; in farming nearly no crops at all. My 130 colonies of bees gathered only 6,000 pounds of surplus honey ; a neighbor of mine has over 100 colonies and less than 1000 pounds of honey. I hope for a better year and am preparing a second apiary this winter.

I sent to different German bee journals articles in favor of our American hives and management. The German hives are generally manipulated from the side (we should call it so, they say from behind) and the frames are very high (16 inches about) and the hive only 8½ inches wide. Some like to have two stories, *i. e.*, the frames only 8 inches high and the hives 8½ inches

wide and all in one piece, to open on one side only. They will not believe yet that a Langstroth hive is more quickly manipulated; further, all their hives are too small for honey production. I kept bees fourteen years in these hives in Germany and now five years in Langstroth hives here in Texas, so I know the difference. The new reversible-hives I do not like yet; had one this season for trial. I can get along very well without any reversing for extracted as well as for comb honey; may be I am wrong.

Selma, Texas.

For the American Apiculturist.

WINTER PASSAGE OVER THE FRAMES.

GEO. F. ROBBINS.

On page 261 of the API the query is put: "Is it a good plan to have a passage way between the top of frames and honey board?" etc. Several reply unqualifiedly, "Yes." Two of them answer, "I think so." So do I; but I only *think* so; I do not know. Does not Mr. Heddon about strike the key? "Theoretically it is a good plan. It reasons out well." But when he comes to test it he cannot see that a bee space between top bars and cover or packing does either good or harm. I have done the same to a small extent. Usually there are bits of comb attached to the top bars that hold the sheet above the frames a good bee space or more. But in a few cases these bits of comb have been wanting and the sheet would rest on the frames. If there were advantage or disadvantage either way, I was not able to discern it. I like to have that passage way there. It looks as though it would be a good thing. It would seem that as the tendency of heat is upwards, bees would naturally take that course when seeking honey from the outside frames. Such are the reasoning and conclusion that occur to us almost as a matter of intuition. It reasons out well thus far, and here we are apt to stop, thinking the argument completed. But an ugly little fact occurs to me here that rather breaks into this beautiful chain. If bees will pass above in place of beneath the frames because that way is the warmer, it would seem that for the same reason, especially if we have a non-conductor above to guard the heat within the hive, they would form their clusters in the upper part. But do they? Mine do not. No matter at what season of the year that the temperature grows cold enough to draw the bees into a compact cluster, whether in rearing brood or not, whether on full frames or empty, I always find the cluster more on the lower than the upper half of the frames, somewhat below the top bar and quite down to the bottom bar. And inasmuch as bees always begin at the lower part of the frame to use the honey, I am inclined to think after all that they pass more between the comb and the bottom bar, or even underneath than overhead.

Why is it, by the way, that bees will cluster in the lower part of the front end, begin to rear brood there and fill it up with honey last, when according to all analogy the warmest part of the hive is in the opposite corner? We may plausibly reason that the closer the winter packing is to the bees and the bees to the packing the better; just as the closer "one wraps the drapery of his couch around him" the warmer it will keep him. But after all to make the analogy complete the bees would have to be wrapped

closely on all sides. I fear we often argue somewhat like the miser who reasoned that if one stove would save half the fuel, two stoves would save all. We are apt to assume a great deal.

But granting all assumptions in the case there are so many conditions that have their effect such as the quantity and age of bees, quality of stores, site of hive — whether on high ground or on a flat, whether in the sun or in the shade — and perhaps many minor matters about which we know nothing and beyond our control, that no testing of the matter can be very conclusive, and we can arrive at no certain conclusion as to the necessity or utility of a winter passage for bees. The notion, like some others perhaps, is one of our pets. We like it, but in the light of common sense how much is it worth to us?

Mechanicsburg, Ill.

For the American Apiculturist.

POSSIBILITIES OF BEE CULTURE.

JOSEPH M. HAMBAUGH.

It would probably dazzle our powers of conception could we lift the veil of the future and glance at the real possibilities in store for the future progressive beekeepers, should it be in keeping with the progressive spirit of the last fifty years. Thirty-five years ago, a movable-frame hive was unknown in our section, and my father, one of the most enthusiastic beekeepers of his day, was a typical man of that period.

He took great pride in having his gums all clean, neat and tidy for the reception of the swarms in the spring; was ever ready to be beckoned from his plow by the "toot of the horn" to hive a swarm of bees; had his platforms in obscure places in the fence-corners ever ready for their reception, and at nightfall each swarm of the day was placed in its abiding place for the season. From ten to fifteen colonies left the fall previous for increase, would probably increase to from thirty to forty by August, and were left strictly alone to "root hog or die" till cold weather in November or December, when each hive was lifted, and the heaviest were treated to a brimstone fumigation, after which they were carried to an outhouse, where the contents were removed, and disposed of. And, oh! such honey! the venom still hangs in public sentiment to-day, and people are loth to classify our beautiful extracted honey with the strained honey of old, and the very best use of our vocabulary frequently fails to convince an auditor that our honey is anything more or less than "strained honey" at last. Dead bees, moth worms, old pollen, dirty combs, etc., were thrown in a large iron kettle, gradually brought to a heat, and then cast into a large gunny sack, from which it was allowed to drip, and frequently its contents squeezed out in a tub or vessel, which was denominated strained honey, and how the palate could endure such stuff is a wonder, and it cannot be wondered at that the taste of man was turned against "such vile stuff," and strange as it may seem there are some in our section of the country who still cling to these old ancient customs, and probably do not know there is such a thing in the world as a bee-paper. How can we appropriately contrast the past with the present? An air of mystery was then thrown over the little honey bee and its little home, and to penetrate into its recesses was considered as an insurmountable task. "Father Langstroth's"

work on "The Honey Bee," with the valuable invention of the movable-frame hive, has made all things possible in this direction; and with the acquisition of the bellows smoker the task becomes a pleasure. From the dark and mysterious has sprung the light, and with father Dierzon's parthenogenesis, we are enabled to place beekeeping on the highest plane of scientific attainment. With the broad strides of the past what might we reasonably expect in the future. As the old stigma of "strained honey" loses its venom, with the prejudice wrought by the glucose fraud, honey will grow more and more in public favor; and as the demand increases, prices will be stiffened, and increased facilities for its production will be the order of the day. This will call for a more general knowledge of bee culture, and honey production. That honey is the purest and healthiest of all sweets cannot be denied, and nature has so amply provided this sweet for our use, that millions of tons go to waste annually for the want of bees to gather it. Within my own upland region, there are thousands of acres of white clover and no bees to gather the honey, and upon the lowlands of the Illinois bottoms, the Cercopsis or Spanish Needle abounds till thousands of acres become yellow as gold. It is here that the future possibilities of beekeeping abound. Our country is undeveloped in this particular resource and should the people become posted in the art of honey production, commensurate with nature's supply, our honey commerce would rank in value with that of sugar and would supersede all syrups, in the daily consumption of life. When honey can be produced so cheap that the laborer as well as the lord can have it upon his daily table, then shall we arrive at the fruition of our hopes and we shall be in the promised land that "shall flow in milk and honey."

Spring, Brown Co., Ill.

"From Gleanings."

BEEKEEPING AS A LIFE BUSINESS.

DR. C. C. MILLER.

"It seems a pity he should settle down into nothing but a bee-keeper, when he might be successful in almost any line of business he should undertake." Such expressions I have heard, when, so far as I could see, the only reasons for it were that it was thought the man might make more money at some other business than beekeeping.

I am aware that too much has been said of the bright side of bee-keeping in the way of urging every one into it, and I have protested against it; for in nine cases out of ten, the person who chooses bee-keeping as his life-business, *merely* for the money there is in it, will meet with disappointment. But for once I want to take the other side, and say something in the way of urging the choice of this business upon a certain class.

Here is a young man about to settle down in life. His college course of study is perhaps finished (and I would urge upon every young man to get a collegiate education, whether he expects to spend his life in apiary, farm, counting-house, or pulpit); and the question is, whether beekeeping shall be his vocation. He has aptitude for the business; what little experience he has had in it has been successful; and he would really like to spend his life at it if he thought he could make as much at it as at merchandise, albeit the

confinement of a merchant's life is not to his taste. But the matter of money stands first in consideration, and he decides in favor of mercantile life.

My young friend, you are making a mistake. In the first place, it is by no means certain that you will be one of the successful merchants. But suppose you are, and that you make double or ten times as much money as you could at beekeeping. You go on at your business, looking forward to the time when you can retire, and enjoy life. There are events that may hinder the realization of your expectations. You may not live long enough. If you do, you will find that your tastes have somewhat changed, and that the life to which you have for years looked forward with bright expectations is mainly a disappointment. On the other hand, if you follow your inclinations, and adopt the pursuit of a beekeeper, there is no necessity for looking forward to a certain time in the future for your enjoyment of life.

You can take your enjoyment as you go — mixed, it is true, with pain and toil, but still a life of enjoyment. You have one important advantage over the merchant; your out-door life gives you a physical vigor he cannot enjoy. He has poorer food than you, even if he eats from the same dish, for he has not the same hunger to spice it. The mere fact of existence is a pleasure to a perfectly healthy animal, be he man or beast; and the man who eats his food with a thorough relish is the better man for it, physically, mentally, and perhaps morally and spiritually.

HIGH *versus* LOW SALARIES.

There is another view that is worth taking, and it applies to all callings — beekeeping or what not. Compare two positions in life. A man in Chicago has a salary of $2,000, and his brother in a country village has one-half as much, $1,000. Which has the better place? Perhaps the Chicago man; perhaps not.

Throwing aside all other considerations, and taking just a dollar-and-cent point of view, if the countryman's annual expenses are $600, and those of the city man's $1,700 (and there may be that difference, even when each seems to be living equally well) the result will be that the country man will lay by one-third more annually than the city man, in which case the $1,000 salary will be better than the $2,000. Suppose, however, that the annual expense in the city is $1,500 and $600 in the country. In this case, $500 is annually saved out of the $2,000, and $400 out of the $1,000. Is the salary that clears the $500 one-fourth better than the salary that clears the $400? And it is to this particular point I want to call the especial attention of the young.

Nine out of ten of the young will be dazzled by the larger salary; and when to this is added the larger annual saving, the question is definitely settled in their mind. If they think far enough ahead, they may find a factor they have omitted from the problem. When the time comes to retire from service — it may never come, and it may be forced upon one before he desires it — when this time comes, the city man will be so fixed in his habits and mode of living, his family in their social circle, that he must continue his same life and same expense of living. Even if he had thought of going back to his former country life, he will now find it impracticable; the rule is, men do not.

Now let our two men be compared afrer the same number of years of service, say fifteen years. In that time the one saving $500

per annum has $7.500 ahead; and the other, saving $400 per annum, has, $6.000 ahead. But what is this worth to each of them? The first, spending $1.500 per year, can live on his $7,500 just five years; and the second, spending $600 per year, can live on his $6,000 just ten years. So you see, when looked at from this point of view, the $1,000 salary is worth just double as much as the $2,000. In other words, the $2,000 man lays by each year enough to support him four months, while the $1,000 one lays by enough each year to keep him eight months. Some of you young men that are itching to get into places to make money faster, think this over. It may make you a little more content where you are.

Marengo, Ill.

Practical Farmer.

THE GREAT WINTERING PROBLEM.

Dr. W. G. Phelps.

This question is again before us, and in spite of the assertion by one and another that it is no problem to them, that they feel perfectly safe in wintering their bees, the question comes to many of us with a good deal of force. How shall I prepare my bees so as to carry them safely through the winter? Let us look at some of the requisites that are considered positively necessary to successful wintering:

1. *Abundance of young bees.* The life of a worker-bee is very short. In the height of the honey harvest it is found by experiment that the whole population of the hive (with the exception of the queen) will be changed in from six to eight weeks. Bees at this time of the year do not die of old age, but wear themselves out, or rather, I think, they wear their wings out, and there comes a day when they will load themselves up so heavily that they fail to return to the hive. We often see the old bees with but stubs of wings trying two or three times to rise from the entrance on their outward flight, before succeeding. During the leisure of winter, bees live much longer, those hatched in September and October living through to March and April; so if we want our bees to go into winter in good condition, they must be reared during those months; and if honey is not coming in from the fields during that time, they must be fed in order to encourage brood-rearing. The older bees will die too soon in the spring before enough young ones are reared to keep up the cluster and do the work of the hive.

2. *Abundance of food*, and that readily accessible to the bees. As before stated, 20 to 25 pounds of honey or syrup for each fair-sized colony, capped over before cold weather sets in, are considered sufficient for winter, and until bloom opens in the spring. In order that the bees may make use of these stores, there must be some way provided whereby they may shift their cluster without having to pass around or under the frames, either by cutting small holes half an inch or more in diameter, through the combs near the middle of the length, and about two or three inches from the top; or by placing sticks across the top of the frames an inch or so apart, provide means for them to pass over, and so shift from one part of the hive to the other. By placing an inverted wooden butter-dish, such as the grocers use, across the top of the frames, a clustering chamber is formed, which the bees will take possession of and so gain access to

the frames over the top, and being enabled to form a compact mass in the warmest part of the hive, save food and the wear and tear consequent upon its consumption in order to make the necessary heat.

3. *Limited space.* The size of the hive should be regulated according to the size of the colony, by removing extra frames and contracting the space with a division-board, so that the bees will be rather crowded for room, and so have less space to keep warm. The combs should be spread a little farther apart for winter than for brood-rearing in the spring and summer, say 1¾ inches from centre to centre, instead of 1⅜ inches as is usual, by that means allowing more of the bees to cluster together between them.

4. *Good ventilation at the bottom of the hive;* that is, the entrance should be kept clear and open, but no *upward* ventilation, except so much as may pass through three or four inches of chaff or sawdust packing, which may be placed over the bees to keep down the heat. Where openings are left above the bees, either from a misplaced mat or ill-fitting cover, it causes a draught of air through the hive, and consequently great loss of heat, which should be particularly guarded against.

Galena, Md.

Western Ploughman.

THE RESTORATION OF PAYING PRICES.

C. H. DIBBERN.

ONE advantage that beekeepers will secure by the very small crop will be the restoring of prices to a paying basis. It remains to be seen whether they will allow competition, or a lack of proper distribution, to again force ruinous prices on them, as soon as a reasonably fair crop is produced.

I do not think that the very low prices, prevailing for the past few years, were caused by over-production, but rather a

LACK OF JUDICIOUS DISTRIBUTION.

Here is a case in point: A few days ago, while passing a store, my notice was attracted to some small baskets of what appeared to be very fine peaches. They were packed in nice new baskets with skeleton covers of alternately white and red colored wood, and the fruit itself was further covered with salmon-covered mosquito netting, giving to it a hazy and very pleasing effect. Upon inquiring the price, I was somewhat surprised to find it $1.00 per basket, holding not more than one-half peck. I remarked that it was pretty high; but the dealer produced his bill from a commission merchant showing that they cost him 90 cents. Thinking that only a very reasonable profit, I bought a basket and took them home for Sunday. What was my disappointment upon opening the basket to find the fine peaches only on top, about a dozen of them, the rest being small, half ripe, fit only for cooking. Here I was paying $8.00 per bushel for a very inferior fruit. I happened to know that in the adjoining state of Missouri, better peaches could be bought for 15 cents per bushel. Of course I want no more such peaches at those prices. The nice packages were all right, and added greatly to their selling value. It is also valuable to put the best on top, just as we put the whitest comb honey next to the glass; but it is downright dishonesty to put an entirely inferior grade where it cannot be seen.

There is also something radically

wrong with the distribution, when peaches are allowed to rot, or are hauled to some neighboring "still house" and sold at 15 cents per bushel, which, at a reasonable price, could be readily sold, only a few hundred miles away. As long as there are no better means of distributing this fruit, the producer in Missouri will mourn that he cannot get more than 15 cents per bushel, and the man in Illinois will lament that he cannot buy it without paying $8.00 for them.

EQUALIZING THE MARKETS.

The same conditions, in a less degree, apply to honey. Surely, with all our railroad and river transportation, there ought to be very much less difference in the selling and buying prices as here indicated. How many people can buy fruit at such prices? How many thousands of baskets is the demand cut short? I do not pretend to say where all this difference goes; if to the railroads, it is certainly a very short-sighted policy, as they could as well carry ten times the quantity, and by lower rates still greatly increase their receipts. If the trouble is with the packers or commission men, then their methods are equally short-sighted. It is quite likely that there are entirely too many of the middle men in the business. Why cannot the producer pack and ship his own fruit or honey direct to the retail dealer or commission man? Then if there are over-charges they can be more easily located and avoided. I believe in allowing every one a fair profit for doing a necessary and fair business. I fail to see where anyone is permanently benefited, where by any circumstances they can force prices so high that people cannot afford to buy, and often let goods go to waste.

Milan, Ill.

American Bee Journal.

ABOUT THE FASTING OF BEES.

WM. F. CLARKE.

THE editorial note to Mr. Jones' article, page 681, where it is asserted that bees can fast for three months without sustaining injury, invites a few words from me.

I have no idea how long bees can safely fast, or for what periods they abstain from food when the weather and surrounding circumstances are favorable to their hibernating, but I believe that their normal winter condition, in this climate, is one in which they become dormant for certain periods during which they do not feed. Every well-authenticated case of bees fasting for a certain length of time, tends to corroborate my theory. Mr. D. A. Jones, in his experiments for the cure of foul brood, has demonstrated that a fast of three weeks does not hurt bees if they are kept perfectly quiet. He thinks if we only knew how to regulate the temperature, they could be safely kept without food for a very long time.

I could not desire a better statement of my theory than that given by Mr. D. A. Jones in the *Canadian Bee Journal* of Oct. 19, viz.: "There is no longer any doubt in our mind that when a colony of bees only consumes a couple of pounds of food during the winter, they must lie in a semi-dormant state much of the time, or 'hibernate,' as friend Clarke puts it; because two or three pounds of stores would scarcely fill the sacs of an ordinary colony of bees, yet it is not an uncommon thing to have them wintered on less than two pounds."

What we want is a thorough series of experiments in relation

to this matter. I have never been, and am not now, in a position to make them. It requires a larger number of colonies than I can keep; facilities for both out-door and cellar wintering, which I have not; and continuous observation of results, which I am not able to bestow, as my duties often call me away from home.

Dr. Tinker, Prof. McLain, Mr. Jones and others have thrown much light on the subject by their investigations, and I am not without hope that before very long we shall get some fixed principles to guide us as to the right temperature and surroundings to secure the condition of dormancy or hibernation—call it what you will—which beekeepers generally know to be the chief prerequisites for perfect wintering. The scarcity of stores the present season makes it a favorable time for these experiments, and I trust the coming winter will increase our stock and store of knowledge on this important subject.

Guelph, Ont.

QUERIES.

Answers by Practical Apiarists.

AGE OF BEES WHEN THEY COMMENCE WORK.

Query No. 39. At what age do young bees commence work in the hive as nurse bees? NOVICE.

ANSWER BY J. M. SHUCK.

I do not know.

ANSWER BY J. M. HAMBAUGH.

Usually within twenty-four hours after leaving the cell.

ANSWER BY J. W. PORTER.

Depends much upon the season and activity of the bees. Two to four days.

ANSWER BY R. L. TAYLOR.

I cannot say precisely, but certainly, within a few hours after they emerge from the cells.

ANSWER BY JAMES HEDDON.

I believe in less than twenty-four hours. In rare instances I have seen young bees gather pollen within forty-eight hours after hatching.

ANSWER BY EUGENE SECOR.

This is a question of very little practical value, and if answered at all could be best answered by scientific observers. I have no actual knowledge sufficient to express an opinion.

ANSWER BY DR. C. C. MILLER.

I don't know. I have seen bees carrying in pollen at five days of age when no older bees were in the colony, so I should judge they were capable of acting as nurses at an earlier age. I suspect they may commence when twenty-four hours old, but we may possibly hear from some one who has made close observations.

ANSWER BY J. E. POND.

From careful tests made by myself I find the rule as follows:

In twenty-one days from the egg the worker emerges; for from ten to fourteen days it acts as nurse and comb builder, and then becomes a fully fledged forager. Probably, if such a case should occur that *all* the bees in a given colony were very young, they would act as foragers at an earlier day, but the above refers to a colony in a normal condition.

ANSWER BY JOSHUA BULL.

I do not think there is any certain age at which young bees invariably assume the duties of nurses. In times of a good honey flow, when all the available force of workers are gone out in search of nectar, they will sometimes commence to feed the larvæ very soon after they emerge from the cell. But when there are plenty of older bees in the hive which have nothing else to do except to feed and nurse the larvæ, then the young bees may not find it necessary to commence their labors quite so soon.

ANSWER BY DR. TINKER.

Young bees upon emerging from the cells do not begin work at once but run about over the combs much the same as a young queen upon hatching. At first they are not fully developed and the hairs on the body have not yet straightened up. After two days they are nearly full grown in size and begin to feed the larvæ. After five days they are fully mature and sometimes venture out thus early in search of pollen. At this time of the year and in early spring they often do not venture out for two weeks or more after hatching.

ANSWER BY G. W. DEMAREE.

The young worker bee when she first emerges from the cell staggers about among the busy throng of workers till she finds a cell of unsealed honey to which she helps herself. After that she appears stronger, but still looks soft and tender like a young bird. In about twenty-four hours she begins to take on her adult appearance and assume the usual color of her type. And shortly after this she begins to nurse the young. I would set the time in the usual course of things at three days old, but of course this will vary some under a variety of conditions and circumstances.

REMOVING WAX-SCALES.

Query No. 40. How do bees remove the little scales of wax that are secreted in the folds of the abdomen when needed for use? Do they (the scales) not drop out? and are they then gathered up, or do the bees take the scales of wax direct from each other? O. K.

ANSWER BY J. W. PORTER.

In all the ways named by enquirer.

ANSWER BY JAMES HEDDON.

I do not know; presume I have read the report of those who have spent years solving this unimportant question to the practical bee-keeper.

ANSWER BY DR. TINKER.

The wax scales are conveyed by the feet to the mandibles. They are not allowed to drop out before using. In my observation they never pick up wax scales that have fallen on the bottom of the hive.

ANSWER BY J. M. HAMBAUGH.

The scales are removed with the claws, kneaded with the jaws and then woven into comb form. The scales frequently fall from the abdomen, but we doubt if they are ever gathered up. They probably do take the wax scales from each other, though we have never seen them in the act.

ANSWER BY R. L. TAYLOR.

Authorities say that the scales of wax are removed by the bees, which is no doubt correct, as the scales are found on the bottom-board only occasionally, and are then not gathered up but swept out of the hive. In such cases there is evidently an overproduction of wax.

ANSWER BY JOSHUA BULL.

Professor Cook in his Manual of the Apiary says, "These wax scales are loosened by the claws, and carried to the mouth by the anterior legs." I don't think they are intentionally allowed to drop out except when they are not wanted for use. No doubt bees sometimes take these wax scales direct from the wax-pockets of each other.

ANSWER BY G. W. DEMAREE.

Each knavish fellow snatches the little white scales of wax from its fellow worker. Bees do not often attempt to use the bits of wax after they have fallen to the bottom of the hive and become cold and hard. I have never seen a bee use its own wax. It always takes wax from some worker in its reach. A good observatory hive will disclose all these things.

ANSWER BY DR. C. C. MILLER.

I know little about it but what I have read. I can hardly think they are dropped and then gathered up, because if such were the case I think we should at times see them more plentiful on the bottom-board. Moreover, if bees were in the habit of gathering up these dropped scales we should not be likely to see them thrown out of the hive as we sometimes do.

ANSWER BY EUGENE SECOR.

For answer to this query consult some scientific work on bees.

Common sense would seem to teach that the scales do not "drop out" to be gathered up by other bees. Where the scales drop on the bottom of the hive it is probably accidental. If that were the rule where do the scales come from that form the small combs often started on the limbs of trees where swarms have hung for some time?

ANSWER BY J. E. POND.

Wax is a secretion of and from the bees themselves. Comb making is a great mystery. By careful examination when comb is being constructed, we find the bees travelling back and forth, with no seeming end in view and in apparent confusion. Still the cells grow till fully completed. As the little scales of wax exude from the rings of the abdomen, I have seen the comb builders take it direct and carry it to where they seemed to think it was needed. It is a curiosity to see the bees in the act of comb building.

ANSWER BY J. M. SHUCK.

As far as my observation goes, the bee that has grown the wax stands very still, and the bee that wants the wax for building comb, lifts a scale with the front finger nail a little, so it can be grasped with the mandibles. This busy worker then takes hold of the wax scale and pulls a little, now this way and then that way until the scale loosens, and then she trots off with it and applies where most needed. I cannot tell what the nature of the conversation is between the bees during this interesting performance, but the wax-grower seems to enjoy it, and no doubt offers to return the compliment at the first favorable opportunity.

CANDIED HONEY IN SECTIONS.

Query No. 41. I am troubled with my sections candying after they have been removed from the hive about two months. How can it be prevented? M. A. S.

Glenbrook, U. S. W.

ANSWER BY J. M. HAMBAUGH.

Keep your sections in a dry, warm atmosphere, a kitchen, or room artificially heated, where the mercury will not sink below 60° F.

ANSWER BY J. W. PORTER.

It cannot be prevented; some nectar will candy in a short time. It rarely does in this part of the country. We have had extracted honey that would candy in four months time, and again that which would keep a year without change.

ANSWER BY G. W. DEMAREE.

The only remedy is to keep the sections in a warm place. I have a sample jar of honey kept in our cook-room for eight years that has never candied. Honey will never candy if kept in a temperature of 80°, and will bear a lower temperature at times.

ANSWER BY DR. C. C. MILLER.

Possibly you might leave them on the hive a little longer. Or do you leave them on too long so that they freeze two months after taking off? I think there must be something peculiar about the case if they candy in two months after the time honey should be taken off in this region.

ANSWER BY EUGENE SECOR.

I don't know. I should want to know more particulars. In my locality there is no trouble from this source if honey is kept in a dry, warm room. When I began bee-keeping we used to put our honey on a swing shelf in the cellar and it very often granulated in the cells. I have learned better, and have no trouble now. If in a cool, damp place I would remove it to a warm dry one.

ANSWER BY R. L. TAYLOR.

A low temperature and the action of the air cause honey to candy; so, as cool weather comes on the change begins, uncapped and broken cells candying first. Some kinds of honey candy sooner than others; thus basswood honey suffers much sooner than clover honey, and the better honey is ripened the longer it will resist the change. The obvious remedy is to see that your honey is well ripened and kept in a dry room having a high temperature, the higher the better, up to 80° or 90° F.

ANSWER BY J. E. POND.

I do not know. Every one is troubled more or less in the same way. Some honey candies far more quickly than does some other.

I have found the best results from keeping the sections in a dark place where the temperature is equable and temperate, say from 60° to 70° F., and where there is no excess of moisture. A warmish dry place seems to serve the best purpose. Still I find all honey will candy in time, no matter how much care is taken.

ANSWER BY JAMES HEDDON.

There is a great difference in different honeys about candying. The white clover and basswood of Adam Grimm's locality, about Jefferson, Wis., would sometimes candy in the combs almost before you could get it off the hives. In such a place I should produce extracted honey.

It is nothing uncommon for comb honey to candy, two months after being removed, if it is kept in a cold place, especially if it was not thoroughly ripened before removing. Keep it in a warm, dry atmosphere to prevent candying.

ANSWER BY DR. TINKER.

Some kinds of honey are no doubt more inclined to candy than others. If honey is kept in a room of the same temperature as is the hive from which it was taken, it will not candy. Sealed comb honey is not apt to candy if kept in a dry room at a temperature of 50°. But extracted honey will usually candy at any temperature lower than that of

the hive and the lower the temperature the more speedily will the candying take place.

I keep my comb honey in a warm upper room and it does not candy if kept the year round. There is a fire beneath the room night and day in the winter time.

ANSWER BY J. M. SHUCK.

Some kinds of honey are more liable to this trouble than others. Usually a warm storage room, say about 60 deg. Fahr., will preserve comb honey in a liquid state if it has been well ripened. Unripe honey in this locality is sure to granulate during the first spell of cool weather. I have now about a hundred pounds of linden honey in the comb that granulated on the hive in 1883. I have repeatedly tried to "warm it up" but nothing less than melting the combs will do it. It was gathered during a heavy flow, and sealed before ripening. The only remedy I know is to pile the honey on the hives (in the surplus cases until the warm weather is over), then remove to a warm storage room to be packed and disposed of as needed.

ANSWER BY JOSHUA BULL.

The best way that I know of to prevent honey from candying in sections is to keep them in a warm place. I have never been troubled with white clover, or basswood honey candying in sections if kept where it was not exposed to frost. Some varieties of honey, however, have a much greater tendency to candy than others. I have had honey stored in sections when apple trees were in blossom that candied hard in a month's time.

Honey gathered from certain kinds of autumn flowers will candy very quickly. I had some this fall that candied in the sections before the super was removed from the hive; and even in the brood nest, where the bees were clustered upon it all the time, it candied and turned as white as milk in less than four weeks after being stored in the combs.

ANSWERS BY HENRY ALLEY.

I do not think young bees commence to do anything in the hive until they are about one week old. This is not, as Mr. Secor suggests, an important question, the same might be said of hundreds of other questions or queries, and if considered alone many of them would amount to little, yet all the questions taken collectively do amount to something. "The little drops of water and the little grains of sand," etc.

Answering query number 40 I am of the opinion that most of the wax scales are removed by the bees, though I think the bee on which the wax is secreted cannot remove it. The wax scales are taken directly to the centre of cluster and the cells moulded therefrom.

I can add nothing new to the answers given to query number 41. Comb honey will sometimes granulate and as long as the bees gather it, store it in the combs and cap it, it is useless to talk about a preventive.

The American Apiculturist.

Published Monthly.

HENRY ALLEY,
MANAGER,
WENHAM, MASS.

TERMS: $1.00 PER YEAR.
SEE INDUCEMENTS TO SUBSCRIBERS.

Wenham, Mass., Dec. 1, 1887.

THE MANAGER'S CORNER.

Something about making Bee-hives.— When anything comes up that will benefit or in any way aid the bee-keeper, we consider it our duty to make the facts public.

We don't like thick, heavy boards for

beehives. When such are used the hives are too heavy. The trouble with boards when split is that the pieces are too thin to groove, and in case a wide piece is needed; two boards must be used, and the difficulty has been to "tongue and groove" them properly in order to make a good joint and not weaken the boards. Some time in October, we ordered of and received fifty hives in the flat from Mr. Falconer. The sides to these hives were to be 15 inches wide and but $\frac{3}{8}$ of an inch thick. As it is very difficult to split a common board that is 15 inches wide, one board $7\frac{1}{2}$ inches wide had to be split to form the sides. Now, what I wish to explain is the ingenious method devised by Mr. Falconer in order to make the sides water and air-proof. A saw kerf was made in the edges of the board where the two came together. The saw used, of course, must be a very thin one, say about $\frac{1}{32}$ thick. The tongue used was a tin one, but the tin furnished by Mr. Falconer was too thin for the purpose and so we used two strips of tin the entire length of the kerf, and in the centre a third piece about six inches long. The tin tongues were cut a little wider than the depth of the kerf, so that when the two pieces for a side are driven together the joint is made perfectly tight.

Now this is a very simple method for matching two thin pieces of boards. Where this principle is applied, thin boards may be used for the roofs of hives, and if kept well painted they never will leak.

False Prophets.—Somewhat over a year since Mr. W. F. Clark made a visit to a well-known beeman in Canada, and while there a scheme for the production of queen-bees by the million at about one cent each was unfolded to the visitor. Brother Clark took it all in and gave it as his opinion that Brother J. was about to revolutionize the world so far as it related to rearing queen bees. Well, we all waited and kept our eyes on the "locomotive while the bell rang. "We need not say that no big revolution or anything new concerning rearing queen bees ever came from that source.

Now, we are again warned to "Look out for the locomotive while the bell rings," as friend Clark has again appeared in the role of a prophet and predicts another revolution, and this time one that will "shake the dry bones and not yet extinct fossils of beedom."

Our new Canadian prophet (you know there are or have been several of them in Canada such as Vennor and Wiggin) predicts that by this invention the production of comb honey will be reduced twenty-five per cent. We wonder how such an invention would have worked during a season, like the one of 1887, when there was no honey to be gathered.

It does not take a fellow with very sharp eyes to see through the "scheme." Fact of it is some of the bee-papers are not getting "subs" as rapidly as they should in order to make business pay, and so some method must be resorted to in order to "boom" the thing. Canada has for a long time been afflicted with a surplus of false prophets. If one dies another soon fills the vacancy and thus the supply is kept up.

However, we sincerely hope that Brother Clark's second prediction will be fulfilled, and that some method is about to develop whereby the cost of producing comb honey may be lessened. When the revolution comes we promise the readers of the API that they shall know as much about it as we do.

We are inclined to think the whole scheme is one of the shrewd advertising scheme some people resort to from time to time, in order to get up a "boom" for some particular object.

Renewals—With this issue a large number of subscriptions will expire. Judging by the past we expect at least eighty per cent. will renew promptly. We need not make any promises as to what the readers of the API may expect during the coming year. Judge of the future by the past.

Arrangements have been made with a dozen or more of the best writers on Apiculture to contribute to the API. By looking over this issue, the names of several new correspondents will be noticed. As to the ability of these new correspondents to instruct and please the readers of the API, each subscriber is allowed to judge for himself. "Amateur Expert" whose most interesting article may be found in this issue, will frequently be heard from during the coming year.

The manager of the API has not made it a practice to quote from exchanges, but in future articles of real value found in other journals, will be inserted in the API, and in all cases due credit will be given. The names of the publication from which quotations are

made will be found at the head of each article.

The API is issued five or six days previous to the date thereof; by so doing we place the journal in the hands of most of its readers on the first day of each month. If not received by the tenth of the month, notice should be sent us at once when another copy will be mailed. Do not wait six months before sending such notice expecting to get the back numbers. In some cases back numbers might be sent, but we cannot promise to keep a stock of Journals on hand for such a purpose.

In conclusion we will say to those who renew or to those who subscribe they will get one of the Drone-and-Queen traps free by mail. Price of trap without the paper is sixty-five cents, by mail.

The Estate of the manager of the API has been attached in the sum of five hundred dollars. We do remember that something was said to us some three years since about endorsing a note of several hundred dollars for a certain young man who was at that time publishing a bee paper, and had it not been for our aid the said paper would have gone the way of some half dozen other such enterprises. Well, we are now called upon to make good that endorsement. The person by whose earnest pleadings we were induced to do such a friendly act has really forgotten the arrangement and promises he made at that time. It would be unwise for us to speak further upon this subject now, but after the case has been through the courts we shall feel at liberty to give a full history of the whole matter.

This lawsuit, no matter how decided, will, in no way, affect the API. We shall continue to mail it to our subscribers as regularly as we have since we took charge of it.

Any Person who will send us the names of three **new** subscribers and three dollars will get one of our best queens free by mail, at any time during the queen-rearing season. Each subscriber can also get one such queen for fifty cents. One of the latest imported Drone-and-Queen traps will be sent free by mail to all subscribers, or to those who renew.

The Present Number completes Vol. V of the APICULTURIST. We return thanks to those who have kindly favored us with articles during the past year. That the API has been well appreciated by its numerous readers, we need only refer to the testimonials that have appeared in the columns of the API from time to time the past year, and in the support received from subscriptions that come in by every mail.

Sample Copies of the API will be sent free to any address. If the reader of this can place half a dozen copies of our Journal in the hands of beekeepers where they will be of some benefit to us we will cheerfully mail them. We know of no better method to aid the publisher.

Fine Honey.— The finest lot of honey to be found in the city of Boston may be seen at the stall of John A. Peabody, No. 112, N. F. H. M. The honey came from parties in Vermont.

The API will be sent to any address on receipt of 75 cents. Those who accept of this offer will not be entitled to the drone-and-queen trap.

"**Amateur Expert**" has favored the readers of the API with a most interesting article regarding English bee-hives. There seems to be a very close similarity between one of the hives described and the new Heddon hive. As we have never seen either the Heddon or Carr-Stewarton hives, we have no means of deciding whether or not Mr. Heddon's claim has been antedated.

One thing is certain, Mr. Heddon's first claims did not suit him, as we understand he has re-issued his patent. Something must have been wrong in the first place.

Pleurisy-root.—One of the readers of the API will import a quantity of seed of the above plant which we can supply at $2.00 per ounce, or at ten cents per package. Directions for its cultivation will be given in a future number of the API.

Don't fail to read the advertisement on another page, of the Beekeepers' Directory to be issued from the office of the API. Blanks to fill out will be mailed to all beekeepers whose names we have.

The January API will give full particulars regarding the contents of the directory.

One of our Bay State Reversible Hives complete, including the surplus arrangement, weighs but thirty-four pounds. When packed ready for winter the weight of all will not exceed forty pounds. Thus it will be seen that most any body can lift one such hive with ease. Another point is the fact that when one of these hives is sent by express the charges will not amount to more than the cost of the hive.

QUESTIONS AND ANSWERS.

BEES STARVING.

A lady beekeeper of West Medway, Mass., writes thus:

"What am I to do to keep my bees through the winter? I fear they have not made honey enough through the summer and none for me. I am afraid they are dying even now."

[Beekeepers who do not read a good bee-paper generally find themselves in a bad fix at some time during the year. Had this lady been a regular reader of the API, she would have had just the information she now desires, and at the proper time too. The middle of November is most too late in this climate to feed bees for winter, unless an experienced hand is to attend to the work.]

QUEEN REARED BY TWENTY BEES.

Poughkeepsie, N. Y.

In changing my bees this spring, from one hive to another, a piece of the brood comb broke down; as it had brood that would hatch in a few days I left it in an old hive for a while; and on examining it a few days ago found that a queen had hatched out. I wish to know if a queen hatched under such circumstances would be of any value. There were only about twenty bees in with her. She is of Syrian breed from the queen you sent me last summer.

Respectfully yours,
S. E. WILEY.

[This question came to hand in June last, but was mislaid. A queen reared under such circumstances cannot be of any great value. Twenty nurse bees are not enough to rear a good queen, even though the weather is hot all the time.]

DYSENTERY IN WARM WEATHER.

Boston, Mass.

MR. ALLEY:—I observe that one or two of my colonies that I am feeding sugar syrup seem to have a slight dysentery Can you tell me what it means? I use one teaspoonful tartaric acid to ten pounds of best granulated sugar to two quarts of water.

SIDNEY A FISHER.

[Several reports have come to hand similar to the above. It seems to be something new for bees to have dysentery during warm weather. Neither the sugar nor the acid added to the syrup is, it seems to us, the cause of the trouble. Were not the bees during the honey dearth of the past season compelled to gather nectar from flowers, they would not have visited, had forage been as plentiful as during most years? We can give no other opinion of the cause of the disease which afflicts the apiary of Mr. Fisher.

Complaint of the same nature has been made by some person in one of our exchanges

In our own apiary two colonies were affected. After several applications of brine without any good results, all the bees were brushed from the combs and destroyed. In order to test the matter, and for further experiment, other bees were at once placed on the combs. Now should they die of the same disease before spring there would be little reason to doubt the cause: it certainly would point to the food stored in the combs. A new queen as well as new bees were placed in each hive.

Bees dying of dysentery in warm weather suggest the unpleasant thought that we are about to see our apiaries depleted as was the case some sixteen years ago. The complaint was not a local one; nearly every apiary in the country was more or less affected. During that year our bees were placed in the cellar. They commenced to die rapidly. The temperature was raised and lowered, but all to no purpose, as the bees continued to die until all those of fifty colonies had left the hives and were dead on the bottom of the cellar.

The writer has not forgotten the most discouraging circumstances under which queen-rearing was commenced the next spring. When spring opened, the only thing in the shape of a colony of bees was one fine queen and a handful of bees. Well, it takes a good deal of hard luck to discourage a fellow

bound to succeed under any reverse, and we can say that the old Bay State apiary never had a more prosperous and successful year.

To return to the text. Now if bees are dying before cold weather sets in, what may the beekeeper expect before spring? The writer is not an alarmist, but every indication points to the fact that beekeepers are about to experience another hard winter. I really hope that time will prove that I am a no better prophet than our good friend Clark, and several others of those Canadian prophets who have made such wild and terrible predictions within a few years.

There is no known remedy that can be applied to bees thus diseased. The symptoms are these: go to the hive in the morning and from one to twenty shiny black bees with outstretched wings will be found on the alighting-board or nn der the frames. The bees look as though they had been soaked in honey. The best thing to do is to destroy the bees; then the combs would be left in good condition.

The following quotation taken from the *American Bee Journal* is a good description of the disease spoken of above. As to the treatment recommended for its cure: those who can test it should do so. It is rather late in the season to attempt it here.]

Diseased Bees —There is a bee-disease in Germany called "Maikrankheit," because it is usually seen in May. The bees have distended abdomens, because they have not been able to void their fæces, after partaking of pollen collected in the early spring after it had been touched by frost. A good remedy is to put a little salicylic acid in syrup and feed it to them — keeping the hive dry, and preventing the accumulation of moisture inside.

Lyle, Minn.

MR. HENRY ALLEY:

Herewith find remittance for renewal of my subscription to AM. API.

I am well pleased with your Journal. The thorough and practical methods given during last year are what is needed and valued by all who desire to learn the modern ways of beekeeping.

K. H. VOLSTAD.

GLEANINGS FROM CORRESPONDENCE.

East Charleston, Vt.

MR. ALLEY:

Not seeing anything from northern Vermont in your API I thought I would write a few lines, although I never wrote for publication before. It has been a poor year for bees in this locality. I put ten colonies in the cellar last fall and all came out in splendid condition and increased to thirty colonies and made a large amount of surplus honey, while a number of beekeepers around here got no surplus.

One swarm came off the eighth day of June and in sixteen days filled a Simplicity hive and thirty one-pound sections of as nice honey as I ever saw, and by the fourth day of July had filled twenty more and sent out a fine swarm, which I think was doing quite well for this section considering the bee pasturage. Nothing is sown for bees around here. I received the drone-and-queen trap all right; it was rather late in the season for swarms, but it cleared the drones out in short order.

I like the API very much; subscribed for it in July, so missed the June number; wish very much you would mail me a copy of that issue.

MRS. A. L. HOPKINS.

Spring, Ill.

FRIEND ALLEY:

The "API" is at hand, for which please accept thanks. You have very much improved its columns, and deserve many encomiums of praise. I trust you may reap a financial benefit in keeping with so worthy an effort, and that your magazine may rank second to none in the land.

Yours truly,

JOS. M. HAMBAUGH.

Lee, Mass.

MR. ALLEY:

I have delayed acknowledging the receipt of the queen for various reasons.

The queen was in fine condition when received. A queenless colony was ready to receive her. At night I stupefied the bees with puff-ball smoke and then introduced the queen direct to the bees. Two days after I found her "balled." I caught the queen and gave the bees a second dose of puff-ball smoke, but the result was the same. A similar circumstance I never knew to happen before.

As the colony would not accept of a queen she was introduced to another stock by the same process which proved a success. In two weeks she commenced to lay freely and has proved herself a very prolific queen. Her worker progeny are very highly colored and uniform in markings. She duplicates herself in her queen progeny, and not a single small or inferior queen among all I have reared from her. I am highly pleased with the results.

In this part of the state bees have gathered very little surplus honey and in many cases only honey enough has been stored to last the bees through the fall.

I have seventy-five colonies and not over half dozen have honey to winter. At our county fair there were seven entries of honey and not one specimen of No. 1 honey. It looks discouraging for the long winter months.

ALONZO BRADLEY.

[The "puff-ball" Mr Bradley speaks of, and which he used to fumigate his bees, is a sort of fungous growth found in old pastures here in New England. It is a sort of dry mushroom, the smoke of which will stupefy bees as completely as chloroform. It is a dangerous substance and should not be used by any but an experienced hand.

Bees that have been queenless a long time do not care for a queen and will not readily accept one.]

Hiawatha, Kansas.

HENRY ALLEY:

The queen to replace dead one came all right and was introduced safely.

I got hurt and was absent from business for a short time, hence forgot to write you; thanks for queen.

No honey flow or at least no surplus so far in northeastern Kansas this year.

We had good rains Aug. 20 and since, and bees are now beginning to work as though they might get enough to winter on which is all we now expect.

The API for September just to hand and is interesting as usual.

Respectfully,

T. B. DICKASON.

Mendon, Ill.

H. ALLEY.

DEAR SIR: I was so well pleased with the sample copy of the "API" that you sent me, that I cannot resist the temptation to subscribe; although I now take two bee-papers.

Yours truly,

EDWIN BALDWIN.

Forest City, Iowa.

HENRY ALLEY:

DEAR SIR: I have received sample copies of the API from time to time. It is a credit to the editor and an honor to the pursuit. E. S.

MARKET REPORTS OF HONEY.

A short time ago, I thought, as I was going to St. Louis, that I would buy a lot of both extracted and comb honey, as the prices quoted in the *Bee Journal* would give me a good profit, for I could readily sell comb honey for 20 cents, and extracted at 12½ cents per pound. The price of comb honey was reported at 10 to 12 cents, and extracted in barrels at 4½ to 5½ cents. I called, and found the commission house had on hand two 5-gallon cans, and six quart jars of California honey; but not a pound of comb honey in the shop! They thought I could not get it in the city, as honey was very scarce, and none coming in. Query: How did that firm know that 10 to 12 cents per pound was all that comb honey would bring in the market?

I went to nearly all the dealers, and could not find a pound of comb honey. A house that has sold a great deal of honey for me said that they could easily get 20 cents for such as I usually sent them, if they had it. Valuable market report!

Carlinville, Ills., Oct. 22, 1887.

J. V. Caldwell, *in American Bee Journal.*

[We long since discovered that most of the market reports of honey were worthless, and we also discovered the fact that some of those who send in such reports do so merely as an advertisement. We have seen in the bee-papers a report of the honey market from a firm not far from the city of Boston. We sometimes visit that establishment, and the amount of honey to be seen there is less than one ton at any time. This same firm always quotes prices for bees-wax but once only had they any for sale. Since we discovered these little tricks, such reports have been excluded from the "Apiculturist."

The Boston commission firm that has handled nearly all the Vermont honey for several seasons has done one thing this year that is hardly in keeping with strict business principles and fair dealing. This firm in order to get the advantage

of those who bought and paid cash for honey, reduced the prices from 18 and 20 cents per pound, to 16 cents per pound. This of course was very damaging to the shipper and to those who had bought and paid cash for the honey they had in stock.

If beekeepers will put up with such imposition they must expect to suffer the consequences. We do not believe in shipping honey to be sold on commission anyway.

BEE NOTES.

Several of the colonies in our apiary were carrying in pollen as late as Nov. 4, notwithstanding the fact that the temperature has been as low as 24° several times this fall. If pollen that has been "frost-bitten" in the spring will produce dysentery, will not the same apply to pollen gathered late in the fall?

Our bees are all packed on the summer stands for winter. No filling of any kind was placed between the outer and inner hives. The space is left clear. We are not satisfied that sawdust or chaff packing is of any advantage. The honey-boards were removed, a passage way arranged so the bees can pass over or under the frames during the winter, and then a heavy duck-mat was placed on, and a thick chaff-cushion placed upon the mat. The cushion was large enough to completely fill the case above the brood-chamber, and thus all upward ventilation checked about the inside of the case. Not a colony of our bees will be placed in the cellar.

It may not be of any great importance whether the snow is brushed from the top of the hives or not; nevertheless, we make it a practice to remove it, and think the saving to the hive alone pays for the trouble. Then again, if the hive has a flat roof and is inclined forward, all the water from the melting snow will drop towards the entrance. On several occasions last winter when a snow storm was followed by a light rain and the weather suddenly turning cold, the entrances to the hives were completely closed, and salt had to be used to open them. When such a storm occurs during the night, of course the best thing must be done. If the sun does not thaw out the entrance, salt must be applied. Too much salt should not be used, as salt and snow combined will keep the temperature at a low degree as long as the two are present.

Bees should be given a chance for a flight as late in the fall as possible. We would not pay ten cents per colony to have our bees insured to winter, provided they can have a flight at any time during the month of January.

We make it a point to give them a flight during the winter at any time when the sun is shining bright, the weather calm and the temperature at 45° or higher. Some few bees will drop on the snow, but the general good to the apiary will more than offset for the loss of a few bees in that way. When the bees do fly in the winter, we make it a practice to clear all the dead bees from the bottom-boards.

From Kansas Farmer.

A bee-hive made with the brood apartments and surplus departments in one solid body is a nuisance; so are also all side-opening hives.

In making your chaff-hives, arrange them so that you can remove the upper story. This will allow the chaff to encircle entirely the upper part of the hive containing the bees.

The apiary never fails to attract attention and hence it follows that visitors are numer-

ous; but we should never take our friends' unaccustomed to bees, into the apiary without veiling them.

In side-opening hives, if we want the frame at the back of hive, all the others must come out first before we reach it. All such hives should be made into kindling wood, as they are not fit to set hens in.

Combs should not be packed together tightly or crowded in the box. When properly put in they should not touch one another. Combs of honey can be put away in the same manner during winter, but should be looked after as soon as warm weather approaches, at which time they should be taken out and placed in the light.

It has been found a good practice to widen the space between the comb frames near the close of the honey-gathering season in order that the bees may, by elongating the cells, place a large share of the winter stores above the cluster. When bees build their own combs after their own design, as in box-hives, spaces are left between wide enough to admit of elongating the cells, in order that a large share of the winter stores may be placed in top of the hive, easily accessible in the severest weather.

[We do not think it a good plan to spread the brood combs at any time in the year. We know of a beekeeper in the state of N. H. who spread the combs in all the eighty hives of his apiary in the fall of 1886. There were but twenty-five colonies alive the next spring. It seems to us that it would require a great amount of work in the spring to get the combs back to the proper thickness again.—MANAGER OF API.]

The *National Stockman* says: For contracting the space in hives division-boards can be used, and doubtless are with good results. We believe that it would be better if each colony were crowded up with division-boards on just as many combs as they will cover nicely, as in this manner their heat can be better maintained. Just to get the required amount of honey on so many combs that the bees can be confined on it, and at the same time leave them a brood nest is the most trouble we have to contend with. But if properly arranged in this manner it would be quite an advantage in wintering.

CONTRIBUTIONS.

The following articles will appear in the January, 1888, number of the API.:

In-breeding, by Dr. G. L. Tinker; Production of Honey, etc., G. W. Demaree; Prevention of Increase, E. A. Morgan.

The above subjects are mentioned as they are of great importance to the beekeeper. Some of the prize essays will also find room in the January API.

Prize Essays.—In response to the prizes offered for essays on any subjects relative to bees as given in the November number, we are already in receipt of several, some of which will appear in the API during the winter.

We make still another offer, as follows: To those who will send in articles which we shall deem of sufficient interest and value to insert in the columns of the API, our journal will be mailed free, one year. This offer will be left open until we have received one hundred essays.

All writers are requested to select their own subjects, and we also request each one who contends for the prizes to place the words "Prize Essay" at the top of the first page of copy.

It costs us twelve cents to send a drone-and-queen trap by mail. We have arranged with the American Express Company to deliver them at any place, where they have an office, for 10 cents each. Those who can receive the traps more conveniently by Express will please notify us when they subscribe for the "Api." Bear in mind that no trap will be sent unless requested to do so.

The number of pages of the API devoted to correspondence and general articles is twenty four, thus leaving eight pages for miscellaneous matter, advertisements, etc. We claim the right to use the last eight pages for our own advertisements, or for any remarks which are in keeping with the rules of a first-class publication. Sometimes we encroach upon the twenty-four pages, but not often.

A Valuable Book Given Away.—We have made arrangements by which we can supply the AMERICAN APICULTURIST and the New York Weekly *World*—for one year, for $2.10, and *present* the subscriber with *one of these books* bound in Leatherette Free Calf:

HISTORY OF THE UNITED STATES—from 432 to 1887.—320 pages.—Price $2.00.

HISTORY OF ENGLAND—from before the Christian era to 1887.—Price $2.00.

EVERYBODY'S BOOK—a treasury of useful knowledge.—410 pages.—Price $2.00.

The book must be selected by the subscriber at the time of sending the subscription, and cannot be afterwards exchanged.

The book selected will be mailed in a cardboard case, at the subscriber's risk; if lost it cannot be replaced. Be sure to write your name, postoffice, county and state plainly, and then the risk of loss is *very* small. The subscription can commence at any time.

Remember, the amount is $2.10 for both papers, and the book free by mail.

ANOTHER GOOD OFFER.

We have made such arrangements with the publishers of the books named below that we can furnish the readers of the API with either of them at a very low figure. The books are sold only by subscription.

1. **The Popular Atlas of the World,** containing a fine map of every state in the Union, also giving climate, history and population of each. This book contains 185 pages, is handsomely bound and will be mailed on receipt of $1.00. Publisher's price is $1.50.

2. **The American Encyclopædia of Agriculture, or Peoples' Library**—The work contains 1100 pages, embraces 5000 sub-

jects, and has nearly 500 illustrations. Bound in the most elegant manner, gold and ink back. Price $3.00. As the book weighs 4½ lbs., it will be cheaper to send by express, charges to be paid by the purchaser.

This work is a library in itself. The author, Mr. Periam, has been for forty years a practical farmer, stock grower and journalist and as such is widely known.

The work is compact and comprehensive and treats of horses, cattle, sheep, poultry, bees, etc., with their characteristics and treatment in health and disease.

Address APICULTURIST,
Wenham, Mass.

SPECIAL NOTICES.

All who subscribe or renew their subscriptions at once will get the APICULTURIST fourteen months for $1.00 as all subscriptions coming in during November and December will be dated to expire January 1, 1889. In addition we give each subscriber one of our improved drone-and-queen traps; also choice of any of the goods mentioned in another place of this issue.

NOTICE TO SUBSCRIBERS.

Please bear in mind that we stop sending the API to all subscribers when the time paid for has expired, unless requested to continue it, or the subscription is renewed.

If by mistake, the journal is mailed to you, and is not needed, please say on a postal card "discontinue API to my address."

Some of our subscribers have had rather "hard luck" with their bees and are not prepared to renew their subscription; to such the API will be continued if they request us to do so,—and if paid for inside of one year it will be perfectly satisfactory.

To Correspondents:—We are now flooded with "essays." That is right, friends, send them in. The best and most worthy will be published in the API, though some of them will not appear for several months to come.

Will those who send us essays or general articles please write on one side of the paper only and use *ink* in writing? Several essays have come to hand that we cannot use as the pencil was used instead of ink.

CONVENTION NOTES.

The Subjects for discussion at the Union Convention at Chicago, on Nov. 16, 17 and 18, 1887, came to hand too late to be inserted in our November issue.

"Come to the Convention" says Dr. C. C. Miller. We wish circumstances were such that we could go to Chicago and shake the hand of some of those people whom we have known for years, but have never seen. We would go a long distance to shake even the hand of Dr. Miller, if no other.

We met Editor Newman of the *American Bee Journal*, at Philadelphia, also at New York, and hope the day is not far distant when we may meet in the city of New York again. Cannot the North American Beekeepers' Society be induced to hold its next convention in that city? We would make an effort to be there.

The Susquehanna County Beekeepers Association will meet at New Milford, Pa., on January 7, 1888. Subjects for discussion: The best way to prevent swarming: also is it advisable to Italianize. All beekeepers are cordially invited. H. M. SEELEY, *Secretary.*

EXPIRATION OF SUBSCRIPTIONS.

When your subscription expires a cross, thus, ×, will be made over this notice. The same is intended as a kind invitation for you to renew your subscription at once. If you need the journal and cannot spare the money we will continue it, if requested to do so.

THE APICULTURIST SUBSCRIPTION AGENCY.

If any subscriber to the APICULTURIST desires a good weekly, semi-weekly or monthly publication they should consult the list of periodicals found on another page of this issue.

From 15 per cent to 25 per cent will be saved to all who send their subscriptions to us.

BEEKEEPERS' SUPPLIES.

FOR SALE

AT THE

BAY STATE APIARY,

WENHAM, MASS.

Bee Hives.

Langstroth Standard.

One hive made up, ready for use, including 21 one-pound sections..... $3 00
The same, in the flat, ready to mail... 2 50

Sections.

Falconer one-piece sections per 1,000 5 50
" " " " " 500 3 00
" " " " " 100 75

Langstroth Frames.

Material for (hanging) frames for Standard L Hive per 100.....$3 00

The frames we use are so constructed that the bees will not build comb between or over them at the top, nor fasten the section case and frames together as is the case when the common top-bar is used.

Nailing Block for Frames.

No one can do good work at nailing frames without a proper board to nail them on. We can send one, by express, that will do the work nicely, price..... 50

Comb Foundation.

We can supply the best brands at manufacturers' prices, and ship direct to our customers from the nearest factory. We also keep a quantity in stock to fill small orders.

1 to 10 lbs., for brood frames, 55 cts per lb.
1 " " " " sections, 65 " " "

Parties ordering foundation for brood-frames should be particular to give exact size they wish the sheets cut.

Perforated Zinc.

This we can supply only in small quantities, shipped with other goods, per foot..... 20
If sent by mail, add 10 cents per foot.

Honey Extractors.

Muth's standard, with knife,..... $11 00
" No. 2, " " 10 00

E. T. Lewis & Co., Extractors.

No. 22. 28 inches in diameter, 25 inches high, 2 frame for any size up to 12½x19; room for 25 lbs., honey below reel, and the best extractor ever made for $10 00

We sell this size only as it is the most convenient to use. This extractor is adapted to the L. frame.

Honey Knives.

Root's knife, by express,..... 70
" " by mail,..... 75

Bee Veils.

The veil has a rubber which draws the top together; it is then placed over any hat and drawn down until the elastic is over the band.

Common net, by mail..... .35

Smokers.

Alley's improved Quinby, 2½ inch, by mail, 1.75; by express, $1 50

Feeders.

Alley's perfection winter, one of the best.
By mail,..... $ 50
" express,..... 40
12 " " 3 75

Queens and Full Colonies.

Queens.

Prices.

Untested queens, each..... $1 00
Selected " each..... 1 25
Tested " each..... 2 00
Extra breeding queens, the best we have, each..... 3 00

Our untested queens are sent out before any of their brood hatches. 95 per cent will prove to be pure. Safe arrival and purity guaranteed in all cases.

We make a specialty of Italians.

Full Colonies.

We consider eight L frames well filled with brood and covered with bees a full colony. Price of such in B. S. R. hive including one set of sections, $12.00. Purchasers to pay express charges.

Books.

Quinby's New Beekeeping (cloth) post paid,..... 1 50
Cook's Manual, (cloth)..... 1 25

Third Edition of the Beekeepers' Handy Book,

or 22 years experience in queen rearing, 300 pages, 100 fine illustrations, handsomely bound in cloth, by mail,.. 1 10

Queen-Rearing Apparatus.

Beekeepers who rear queens, whether by the Alley method or by any other, should have the apparatus here described. The SWARMING BOX and QUEEN-NURSERY are articles that no person who rears queens can dispense with.

By using the swarming-box a large colony of bees can be confined a long time or transported safely hundreds of miles. It is a very useful article about the apiary at all times during the season.

Sent only by express, price $1.25.

When a colony swarms and it is desirable to preserve the queen-cells, and no nuclei are at hand, the Queen-nursery in such cases will be found invaluable; the cells can be placed in them and they need no further care for a week or ten days later. Virgin or fertile queens can be kept in the nursery for several weeks. We have sold a large number of queen-nurseries in years past.

We use the following articles in rearing queens, a full description of which can be found in the

"Beekeepers' Handy Book."

	Express.	Mail.
Queen-nursery (of 21 cages).....	$1 25	$1 60
Swarming-box.....	1 25	
Fertilizing-hive (complete).....	50	
Fumigator for using tobacco...	25	30
Cone-feeder.....	15	20

To make the lot complete, we put in each package one drone-and-queen trap, one copy of the THIRD edition of the "Handy Book," and send all for $4 50

All these articles can be packed in the swarming-box and sent safely by express or freight.

Brooms for Brushing Bees from Combs.

We find a small "corn-broom" best for this purpose as it does not injure or irritate the bees, and will do the work better and quicker than anything else used for the purpose.

1 broom by mail,..... .25
" " " express,..... .20

HOW TO REMIT MONEY.

Remit by registered letters, cashier's check or express orders. If sent by money orders or postal notes, have them made payable at the Salem, Mass., P. O.

Address,

HENRY ALLEY,

Wenham, Essex Co., Mass.

AMERICAN APICULTURIST CLUB-LIST FOR 1888.

Desirous to do a good thing for those who subscribe for the *Apiculturist*, we have prepared the following newspaper and magazine club list. All yearly subscribers for the API, can get any paper on the list at the rates given in the right hand column.

Subscribers who accept of any of these papers are not debarred from receiving any premiums offered to yearly subscribers for the API. If you want any paper or magazine not found on the list, and are a subscriber for the API, we will get it for you at club rates.

The following list was prepared especially for the benefit of our readers. We can furnish any or all of the papers named to those who subscribe for the API. If any one desires to subscribe for several of the papers in the list, they can do so. Note the prices.

Not only do we make a liberal discount to those who subscribe for our journal, but each subscriber is entitled to one of our drone-and-queen traps, free by mail, as well as to a discount on other goods, as per notice in another part of this issue.

PERIODICALS.

Weekly publications are designated by the letter "w" following the name; Semi-Weeklies "s-w"; Bi-Weekles, "b-w"; Monthlies, "m"; Bi-Monthlies, "b-m"; and Quarterlies, "q."

Publisher's Price.	*Name of Publication.*	My Price.
	A	
$ 50	Agriculturist, Racine, Wis.....m	35
1 00	Albany Argus.....w	98
1 00	Albany Journal .....w	98
1 50	American Agriculturist, N. Y....m	1 10
1 00	American Bazaar, N. Y.....m	80
1 50	American Dairyman, N. Y.....w	1 30
1 00	American Farmer, Baltimore..s-m	90
1 00	Am. Kindergarten Magazine, N. Y. .....m	85
1 25	Am. Poultry Adviser, Zanesville, O. (with premium).....m	90
1 00	Am. Poultry Journal, Chicago...m	85
1 50	Am. Poultry Yard, Hartford.....w	1 20
1 00	American Reformer, N. Y.....m	90
1 70	American Wesleyan, Syracuse..w	1 60
2 00	Arkansas Traveller, Little Rock. w	1 60
2 00	Arthur's Home Magazine, Phila. .....m	1 40
	B	
1 50	Babyhood (care of infants).....	1 20
1 50	Ballou's Magazine, Boston.....m	1 30
1 00	Baltimore American.....w	1 00
1 00	Baltimore Sun.....w	90
2 00	Bismarck Tribune, Dakota.....w	1 90
50	Bistoury, Elmira, N. Y.....q	40
1 00	Bookmart, Pittsburg.....m	85
1 00	Boston Journal.....w	1 00
1 50	Boston Traveller.....w	1 00
1 00	Breeder's Journal, Beecher, Ill..m	80
1 00	Buffalo Commercial Advertiser. w	95
1 00	Buffalo Courier.....w	95
1 00	Buffalo Express.....w	85
1 00	Burlington Hawkeye.....w	90
	C	
1 00	Carpentry and Building, N. Y...m	80
1 50	Chattanooga Times.....w	1 25
1 00	Chicago Herald.....w	85
1 00	Chicago Inter-Ocean.....w	90
1 00	Chicago Journal.....w	1 00
1 50	Chicago Ledger.....w	1 25
1 00	Chicago News.....w	95
1 00	Chicago Times.....w	80
1 00	Chicago Tribune.....w	90
1 00	Christian Woman, Philadelphia, m	85
1 50	Church's Musical Visitor, Cincinnati.....m	1 20
1 00	Cincinnati Gazette.....w	90
1 15	Cincinnati Enquirer.....w	1 10
50	City and Country, Columbus, O., m	40
1 00	Cleveland Leader.....w	90
1 00	Cleveland Plaindealer.....w	1 00
1 00	Clinique, Chicago.....m	90
1 50	Coleman's Rural World, St. Louis .....w	1 20
2 50	Country Gentleman, Albany, N. Y. .....w	1 95
	D	
75	Dairy and Farm Journal, West Liberty, Ia..... .....m	60
1 75	Davenport Gazette, Iowa.....w	1 10
1 00	Delineator, N. Y. (Buttrick's)..m	1 00
1 25	Denver Times.....w	1 10
1 00	Detroit Free Press (literary ed.).w	95
1 00	Detroit Post.....w	95
1 00	Domestic Fashion Plate, N. Y....	90
1 00	Drake's Traveller's Magazine, N. Y..... .....m	85
	E	
1 00	Elmira Advertiser.....w	95
50	Empire State Agri., Rochester..m	35
	F	
1 00	Family Herald and Star, Montreal.w	90
1 25	Fanciers Gazette, Indianapolis..m	90
1 50	Farm, Field and Stockman, Chicago, 20 packages seeds.....w	1 30
50	Farm and Garden, Philadelphia.m	35
50	Farm and Home, Springfield, Mass. .....m	45
50	Farm Journal, Philadelphia.....m	53
1 25	Farmers' Review, Chicago.....m	1 10
2 00	Florida Agriculturist, DeLand..w	2 50
50	Forest, Forge and Farm, Albany..m	45
4 00	Forest and Stream, N. Y.....w	3 25
2 25	Frank Leslie's Budget.....m	2 00
1 75	Frank Leslie's Pleasant Hours..m	1 60
25	Frank Leslie's Almanac....annual	25
1 00	Frank Leslie's Holiday Book. .....annual	75

G

50 Gems of Poetry, N. Y.....m 50
1 00 Gleason's Monthly Comp'n Bos., m 65
1 25 Golden Censer, Rockford, Ill.....w 1 10
50 Good Cheer, Greenfield, Mass...m 40
2 50 Good Housekeeping, Holyoke, ...bi-w 2 15
1 00 Grand Army Gazette, N. Y.....m 90
50 Green's Fruit Grower, Rochester.q 30

H

4 00 Harper's Bazar, N. Y.....w 3 30
25 Harper's Handy Series, each..... 20
4 00 Harper's Magazine.....m 3 20
4 00 Harper's Weekly.....w 3 30
2 00 Harper's Young People,.....w 1 70
1 50 Hartford Courant.....w 1 35
1 50 Hartford Post.....w 1 35
1 10 Household, Brattleboro.....m 85

I

1 25 Illinois State Jour., Springfield..w 1 10
1 00 Illus. Family Herald, Augusta, Me. (25 chromos).....m 75
1 50 Indiana School Jour, Indianapolis, m.....m 1 25
1 50 Iowa Homestead, Des Moines..w 1 15

J

75 Junior Am. Mechanic, Phila....m 65

K

1 00 Kansas City Times.....w 95
1 25 Keokuk Constitution, Iowa.....w 1 25

L

1 25 Ladies Floral Cabinet, N. Y.....m 1 10
50 Ladies Home Jour., Phila.....m 40
1 00 Leavenworth Times..... w 85
1 00 Lever, Chicago.....w 85
1 00 Lexington Press, Ky. (new 65)...w 90
3 00 Lippincott's Magazine, Phila...m 2 40
50 Literary Bulletin, N. Y..... 50
2 00 Literary Life, Chicago.....m 1 25
30 Little Christian, Boston.....s m 30
1 50 Little Folks, N. Y. (illustrated)..m 1 25
1 00 Louisville Commercial, Ky.....w 90
1 50 Lowell Journal, Mass.....w 1 45

M

1 50 Manufacturer and Builder, N. Y.m 1 30
1 00 Maryland Farmer, Baltimore....m 85
1 00 Masonic Chronicle, Columbus, O.m 70
1 00 Mechanics, N. Y. .....m 80
1 00 Medical Bulletin, Philadelphia..m 90
1 00 Metal Worker, New York (new 90)w 1 00
1 25 Michigan Farmer. Detroit.....w 1 15
2 00 Mind and Matter, Philadelphia..w 1 90
1 00 Modern Miller, Moline, Ill.....m 90
1 00 Montreal Gazette, Canada.....w 85
1 10 Montreal Witness.....w 90
1 50 Mother's Magazine, N. Y.....m 1 15
2 00 Muscatine Journal, Iowa.....w 1 90

N

1 00 Nashville American, Tenn.....w 1 00
1 00 National Poultry Monitor, Springfield, O..... .....m 90
1 00 National Republican, Washington .....w 75
40 New Dominion Monthly.....m 30
1 00 New Haven Register.....w 90
1 50 New Orleans Picayune.....w 1 15
1 50 New Orleans Times-Democrat. .w 1 15
1 00 New York Herald.....w 98
3 00 New York Independent.....w 2 65
1 00 New York Sun.....w 93
1 00 New York Times.....w 98
1 25 New York Tribune.....w 95
1 00 New York Witness.....w 95
1 00 New York World.....w 90
1 00 Norfolk Virginian.....w 85

O

1 00 Ohio State Journal.....w 85
1 00 Oil City Derrick, Pa.....w 90
2 00 Olive Branch, Utica, N. Y.....m 85
1 00 Omaha Herald.....w 95
1 50 Orange Co. Farmer, Port Jervis.w 1 36

P

1 50 Painter's Magazine, N. Y.....m 1 20
1 00 Pansy, Boston, Illustrated.....w 90
2 00 Peck's Sun, Milwaukee, Wis.....w 1 75
1 00 People's Fireside Jour., Boston..m 75
60 People's Magazine, Philadelphia.m 55
1 50 Peoria Transcript.....w 1 20
2 00 Peterson's Magazine.....m 1 50
1 00 Philadelphia Press. .....w 95
1 00 Philadelphia Times.... .....w 1 60
75 Picture Gallery, Chicago.... ....m 60
1 50 Pittsburg Commercial Gazette...w 1 35
1 00 Portland Advertiser, Me.....w 90
1 00 Poultry Bulletin, N. Y..... .....m 80
1 00 Poultry and Farm Journal Minneapolis.....m 75
50 Poultry Keeper, Chicago .....m 45
1 25 Poultry Monthly, Albany.....m 95
1 25 Poultry World, Hartford, Conn..m 95
2 00 Practical Farmer, Philadelphia.w 1 15
1 00 Practical Teacher, Chicago ...s-m 75
1 00 Providence Press.....w 90
50 Purdy's Fruit Recorder, Palmyra.m 50
65 Purdy's Fruit Recorder, Palmyra, with choice of prem.....m 65

Q

1 50 Quiver, N, Y., illus. reprint.....m 1 25

R

1 00 Richmond Dispatch.....w 1 00
50 Ridley's Fashion Magazine, N.Y., q 45
1 00 Rochester Democrat and Chron., w 85
1 00 Rochester Herald .....w 90
1 00 Rochester Post Express.....w 85
1 00 Rochester Republican. .....w 85
1 00 Roller Mill, Buffalo, N. Y.....m 90
1 50 Rural Californian, Los Angeles..m 1 15
2 00 Rural New Yorker and seeds, N.Y.w 1 70

S

50 Sabbath Reading, N. Y.....w
1 00 Sailor's Magazine, N. Y.....m 50
1 25 Savannah News, Ga.....w 1 40
2 00 Saturday Night, New York.....w 1 15
1 00 Science Observer, Boston.....q 29
1 00 Scientific American, N. Y.....w 3 75
1 00 Selma Times-Argus, Alabama...w 1 05
1 60 Shakespearians, Philadelphia...m 1 00
1 50 Southern Cultivator, Atlanta ...m 1 30
1 25 Southern Planter, Richmond.....m 1 13
50 South and West, St. Louis ....s-m 46
1 50 Spirit of Missions, N. Y.....m 1 95
1 00 St. Louis Globe-Democrat.....w 90
1 00 St. Louis Republican.....w 75
1 00 St. Paul Pioneer Press.....w 90
1 00 Stoddard's Magazine, N.Y, chro.m 00
1 00 Street's Monthly, Waco, Tex....m 45
1 25 Swine Breeder's Journal, Indianapolis .....m 1 00
1 50 Syracuse Journal.....w 1 05

T

1 90 Texas Farm and Ranch, Austin, s-m 75
1 00 Toledo Blade, Nasby's Paper....w 90
1 00 Toledo Telegram..... .w 95
1 00 Toronto Globe, Canada.....w 95
1 00 Toronto Mail.....w 90
1 00 Torrey Botanical Bulletin, N.Y.s-m 96
1 00 Tribune and Farmer, N. Y.....w 85
1 00 Troy Telegram, N. Y.....w 80
1 00 Troy Times..... ..w 95

U

1 00 U. S Miller, Milwaukee.-.... ...m 90
85 U. S. Gazette, Washington, D. C., pensions ....m 60

1 50 Utica Herald.....w 1 40
1 50 Utica Observer (new 1 30).....w 1 50

V

1 00 Vesper Bells, Philadelphia.....w 90

W

3 00 Wallace's Monthly, N. Y.....m 2 65
1 00 Washington Post.....w 85
2 50 Washington Republic.....w 2 15
1 00 Washington Star.....w 95
1 00 Wayne County Courier, Detroit,.w 85
1 10 West'n Agriculturist, Quincy, Ill.m 85
60 Western Machinist, Cleveland...m 55
50 Western Plowman, Moline, Ill...m 40
60 West Shore, Portland, Oregon...m 1 65
1 00 Wheeling Intelligencer.....w 95

Y

2 00 Yankee Blade, Boston (with prem.) .....w 1 10
1 00 Y. M. C. A. Watchman, Chicago m 95
30 Young Folks' Circle, Springfi'd, O. .....m 30
2 50 Young Men of America, N. Y.....w 2 00
1 75 Youth's Companion, Boston, new subs... .....w 1 25

Special to Beekeepers.

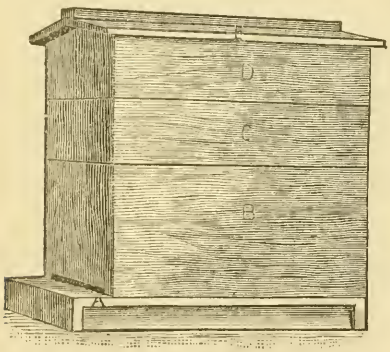
1 00 American Bee Journal.....w 85
1 00 Canadian Bee Journal.....w 85
1 00 Gleanings in Bee Culture.....s-m 90
50 Rays of Light.....m 40
1 25 Apiary Register (yT. G. Newman)..... 90
75 Bees and Honey (by T. G. Newman)..... 1 00
1 25 Beekeepers' Guide (by A. J. Cook) 95
50 Dict. of Prac. Apiculture (by John Phin)..... 45
15 Extracted Honey (Dadant & Son) 15
05 Honey as Food and Medicine (by Newman)..... 04
2 00 Langstroth on the Hive and Honey Bee..... 1 50
1 50 Quinby's New Beekeeping (by L. C. Root)..... 1 15

ADVERTISEMENTS.

TERMS FOR ADVERTISING.

One inch,	each insertion,	$1 00
Two "	" "	1 80
Half column,	" "	4 00
Whole "	" "	7 00
" "	" "	12 00

CASH WITH COPY.
SPECIAL RATES GIVEN.



THIS CUT REPRESENTS THE WINTER CASE OF THE BAY STATE BEE HIVE.

We believe this hive will prove satisfactory to 90 per cent of all who test it.

Hive complete, 3.00
" in flat, 2.50

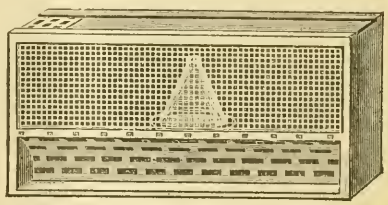
Address

H. ALLEY,
Wenham, Mass.

EY'S

DRONE-AND-QUEEN TRAP.

RELIABLE, CHEAP, PRACTICAL.



PRICES FOR ALL THE MATERIALS IN THE FLAT.

One-half dozen, one made up (seven in all) $2.00
One dozen, one made up (thirteen in all) $3.50

Those who purchase the traps of us can sell them to whom they please, and where they can find a market for them.

METAL PARTS FOR THE TRAPS.

By express, 15 cts. per trap. By mail 22 cts. per trap.

INDIVIDUAL RIGHTS.

Any beekeeper can purchase a farm or individual right of us for $2, and to all who do so will be sent by mail, one of the latest improved traps.

Address

HENRY ALLEY,
Wenham, Mass.

The Drone-and-Queen Trap.

MR. ALLEY:

Your drone-and-queen trap has robbed swarming of all its terrors.

Miss G. P. S.

The drone-and-queen traps came all right. I have tried one of them in hiving a swarm of bees and it worked all right.

J. S. BARB.

Price 65 cts. by mail.

The Beekeepers' Handy Book

HAS HAD AN EXTENSIVE SALE THE PAST FEW MONTHS.

It will tell you all about Queen-rearing and how to keep bees and make beekeeping pay.

300 Pages, Bound in cloth, by mail $1.10.

☞ SEE CLUB RATES (on another page).

HENRY ALLEY,
Wenham, MASS.

BEE KEEPERS

Should send for my circular. It describes the best Hives, the best Cases, the best Feeders and the best Methods. Address,

J. M. SHUCK,
DES MOINES, IOWA

BEES AND QUEENS.

Here is a chance for all that want to buy

Italian, Hybrid or German Brown Bees

FOR 1887.

No foul brood, and prices low. Send two cent stamp for price list to

THOMAS GEDYE,

3-87-1yr. LaSalle, LaSalle Co., Ill.

QUEENS!

BENTON'S BEST BEES.

Select, choice, tested Queens, each $5.

Sample bees from queens advertised, by mail, 10 cents. 75 full colonies. No cheap queens.

A. M. FIRMAN,
Quasqueton,

3-87-1yr. Buchanan Co., Iowa.

DEALERS' LIST.

NEW YORK.

W. T. Falconer, Jamestown, supplies etc.

C. M. Goodspeed, Thorn Hill, Onon. Co., bees and queens.

J. Van Deusen & Sons, Sprout Brook, Mon. Co., flat bottom comb foundation, wholesale and retail.

F. J. Crowley, Batavia, supplies, foundation, bees and pure queens of any race.

MAINE.

E. B. Leighton, Falmouth, supplies, breeder of choice Italian bees and queens.

ILLINOIS.

F. A. Snell, Milledgeville, Carroll Co., Italian bees, beehives, sections, extractors, veils, smokers, comb foundation, etc.

MICHIGAN.

A. J. Cook, Lansing, Pub. Cook's Manual, or Bee-keeper's Guide.

OHIO.

C. F. Muth, 976-978 Central Ave., Cincinnati, supplies.

D. A. McCord, Oxford, Butler Co., bees, queens and supplies.

E. T. Lewis & Co., Toledo, apiarian supplies. 1886.

Frank A. Eaton, Bluffton, Allen Co. Bees, Queens and Poultry.

IOWA.

J. M. Shuck, Des Moines, Patentee, and Manufacturer of the invertible hive and surplus case.

Oliver Foster, Mt. Vernon, bees, queens, adjustable honey-case and supplies.

INDIANA.

A. B. Miller & Son, Wakarusa, Elkhart Co., supplies.

MASSACHUSETTS.

Wm. W. Cary, Colerain, successor to Wm. W. Cary & Son, breeders, bees, queens, and dealer in apiarian supplies. Price list free.

WEST VIRGINIA.

C. L. Eakin, Wadestown, Monongalia Co., W. Va. Italian Bees and Queens.

BARNES' FOOT POWER MACHINERY.

Read what J. I. PARENT, of CHARLTON, N.Y., says—"We cut with one of your Combined Machines, last winter, fifty chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make and we expect to do it with this saw. It will do all you say it will." Catalogue and Price-list Free.

Address, W. F. & JOHN BARNES,
2-87 6 mo. *No. 484 Ruby St., Rockford, Ill.*

DR. TINKER'S SPECIALTIES

THE finest WHITE POPLAR Sections and the best PERFORATED ZINC ever offered to beekeepers. Our new machine makes 50,000 perforations in a day. We also claim the finest strain of BEES for comb honey—the Syrio-Albinos. Price-lists of QUEENS and Supplies free. Samples of sections and zinc, three cents.

Address, DR. G. L. TINKER,
NEW PHILADELPHIA, O.

A YEAR AMONG THE BEES.

A work of 128 closely printed pages. Being a talk about some of the implements, plans and practices of a beekeeper of 25 years experience, who has for 8 years made the production of honey his exclusive business.
Bound in cloth, by mail, 75c.

DR. C. C. MILLER,
Marengo, Ill.

HEADQUARTERS FOR BEEKEEPERS.

CARDS AND STATIONERY.

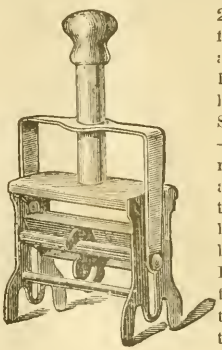
Besides our beautiful eight color instructive Chromo card, we have plain designs; also Fancy cards, and fine two and three letter *monograms*, all at astonishingly *low prices*, suitable for business and amusement for old and young. 300 envelopes 300 note heads $1. Circular and Samples free. Package 25 cards, 10 cents, neat box Cards and Sample honey candies 15 cents.

Address
J. H. MARTIN,
Hartford, N. Y.

SAVE PRINTERS' BILLS

BY USING A

SELF-INKING RUBBER STAMP



2,000 impressions for 10 cts. Will last a life time. It prints Envelopes, Letter-heads, postal cards, Sections, Clothing, —everything. Your name, occupation and address, with the machine and bottle of ink, sent by mail for $1.00; Extra bottle of ink for 12 cents. Show this advertisement to your friends.

Send me an order for 10 stamps, and get your own free. Agents wanted everywhere. Send for catalogue and terms.

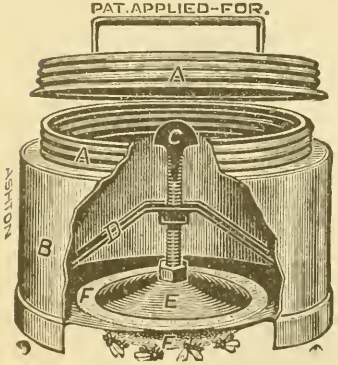
Address, GEO. T. HAMMOND,
Oct., 1887. *Brockport, N. Y.*

SUBSCRIBE

FOR

The American Apiculturist

PERFECTION BEE FEEDER.



The "PERFECTION" having been thoroughly tested, and proved of inestimable value in Bee Culture, the undersigned, a practical apiarist, is prepared to furnish the same at reasonable prices, and the usual discounts to dealers. Among the many points in which this Feeder excels all others are the following.

The supply of food can be perfectly regulated.

The food will not become rancid, nor sour, and is strained before it reaches the bees.

The same method is used in feeding as provided in nature.

The "PERFECTION FEEDER" is simple in construction, well made, readily cleansed and durable.

It is most admirably adapted to the use for which it is intended, and will give entire satisfaction to those who will give it a trial, as its merits are unquestioned.

Prices for sample Feeder, by mail, postage paid:

4 lb. Feeders 50 cts. 6 lb. 60 cts. 10 lb. 70 cts.
For one dozen PERFECTION FEEDERS F. O. B.
4 lb. Feeders, 3.50. 6 lb. 4.50. 10 lb. 5.50.

Address, M. E. HASTINGS,
12—86—1y. *New York Mills, Oneida Co., N. Y.*